EMD Sees Big Savings In Diesel Replacement

June 20, 1960

# RAILWAY AGE weekly

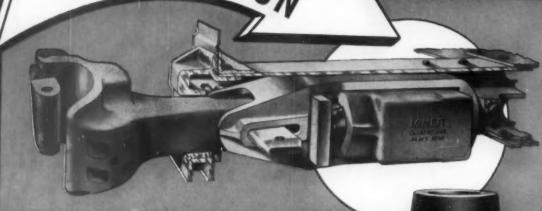
# Convention Report

Mechanical Division debates the latest technical advances



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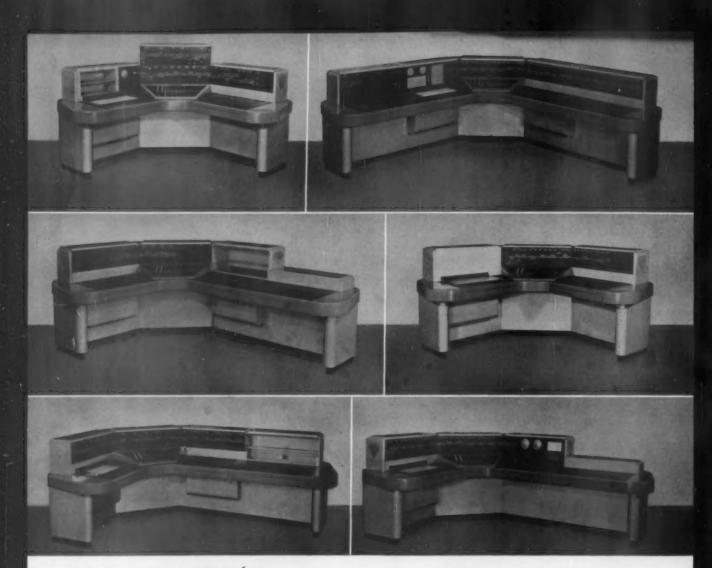
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# Week at a Glance

### Departments

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Railway Age, established in 1856, is indexed by the Business Periodicals Index, the Engineering Index Service and the Public Africa Information Service. Name registered in U.S. Patent Office and Trade Mark Office in Canada.

Canada.

Published weekly by the Simmens-Beardman Publishing Corporation at 440 Besten Pest Read, Orange, Cons. Second-class pestage paid at the Pest Office at Orange, Consumer Consum

### NYC asks merger 'ground rules' ......p. 9

C&O's decision to ask ICC for permission to acquire control of the B&O was followed by two fast moves by the NYC: (1) A request that the Commission consider new "ground rules" for eastern mergers; (2) an announcment that NYC will consider making its own proposal to B&O stockholders. Meanwhile, N&W and NKP reached agreement on merger terms.

### Cover Story—Mechanical division meets in San Francisco......p.14

The convention heard SP's D. J. Russell call for broader, interdepartmental thinking, and a plea for revised per diem rates that would spur new equipment development from Southern VP D. W. Brosnan.

### Cover Story—Re-dieselize and save money, says EMD ......p.20

The savings, EMD believes, would be comparable to those realized from the railroads' initial dieselization. Diesel replacement offers added motive power capacity, as well as fuel economy, and lower operating and maintenance costs.

### Cover Story-Santa Fe impresses engineering students ......p.28

Railroading still offers challenge and opportunity. The Santa Fe has been demonstrating this to civil engineering students by showing them its huge line-change job in Arizona.

### Microwave: The pros and cons ......p.30

The plus and minus factors that must be considered in microwave planning were outlined in special committee reports presented at the AAR's Communications Section meeting in Detroit last week.

### The Action Page—Spotlight on freight traffic ......p.42

Railroads urgently need more revenue to meet the cost of increased wage rates. The revenue will have to be brought in by the traffic department. Here's a list of some major assignments on the agenda of most traffic departments.

### Short and Significant

### Repeal of the 10% tax on fares . . .

is expected to be put up to the Senate this week. The Senate Committee on Finance last week added a repealer amendment to the House-passed bill which proposes to continue the levy. Under legislation enacted last year, this tax is scheduled to be cut to 5% on July 1. Letting that legislation become effective

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### Week at a Glance cost

### Current Statistics

Operating revenues	
4 mos., 1960	\$3,234,559,129
4 mos., 1959	3,246,255,701
Operating expenses	
4 mos. 1960	2,547,246,510
4 mos., 1959	2,561,979,109
Taxes	
4 mos., 1960	360,571,999
4 mos., 1959	342,591,970
Net railway operati	ing income
4 mos., 1960	211,989,020
4 mos., 1959	236,919,680
Net income estimate	d
4 mos., 1960	147,000,000
4 mos., 1959	162,000,000
Aver ge price railroc	ad stocks
June 14, 1960	96.46
June 16, 1959	108.85
Carloadings, revenue	freight
22 wks., 1960	13,200,414
22 wks., 1959	13,562,370
Freight cars on order	
May 1, 1960	41,003
May 1, 1959	35,479
Freight cars delivere	d
4 mos., 1960	19,429

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could be a compromise between proponents of complete repeal and those favoring continuance of the tax on the 10% basis.

### Double-deck commuter cars . . .

may be ordered by a fourth Chicago railroad. Two roads, Burlington and C&NW, have such equipment now, and a third road, Milwaukee, recently placed an order for 40. C&NW Chairman Ben W. Heineman told a Senate subcommittee recently that he'd heard unofficially "that at least one other Chicago road is considering the acquisition of such coaches, although no decision has yet been made."

### New rate puzzle . . .

confronts chief traffic officers as a result of rising labor costs. There's some support, apparently, for a general rate increase. Others favor alternatives including absorption of costs by further economies; selected increases on movements now handled at a loss; more application of incentive rates to build traffic revenue. In the East, meetings of traffic executives during the next two weeks may develop more specific proposals.

### Incentive per diem bill . . .

has cleared the House Committee on Interstate and Foreign Commerce. The committee has sent it to the House with a recommendation that it be passed. The bill, H.R.7937, would authorize the ICC to order increases in the per diem rate to promote buying of freight cars. A like bill, S.1789, is on the Senate calendar with a favorable report from the Senate Interstate Commerce Committee and a clearance from the policy committee of the Senate's Democratic majority.

### Commuter-aid bill . . .

has been reported favorably to the Senate by its Committee on Banking and Currency. The bill, S.3278, would provide federal loans to municipalities for purchase of commuter cars and other facilities for lease to railroads. This is the program sponsored by the American Municipal Association and eastern railroads.

### Arbitration hearings in the radio-telephone dispute . . .

involving the BLE and the Detroit, Toledo & Ironton are now scheduled to begin June 27 in Baltimore, Md. At issue: Union demands for payment of an arbitrary for use of train radio by engineers. Emergency board proceedings dealing with the same organization and a similar issue (along with other disputed points) are in progress in Los Angeles. The carrier involved: Santa Fe (Coast Lines).



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# NYC Asks Merger 'Ground Rules'

➤ The Story at a Glance: Railroad merger stories were back in the news last week with five eastern roads sharing the headlines.

N&W and Nickel Plate announced Monday that they had agreed on merger terms; C&O asked ICC permission to acquire control of B&O by an exchange of stock, and NYC moved on the scene with two proposals: (1) On Monday the road asked ICC to establish merger "ground rules" for eastern roads, and (2) on Tuesday NYC announced tersely that directors would meet June 24 "to discuss a proposed offer to be made to shareholders of the B&O."

These developments left the merger situation mildly confused at week's end. Among the big questions being debated: Will eastern roads remain free to shape merger proposals on their own, or will the ICC accept NYC's "ground rules" petition and ultimately do the job for them?

Marrying two railroads is a complicated ceremony, even if all goes well. And last week, as plans were being pushed for two such weddings in the East, there was a call to have the nuptial rules rewritten.

The call came from New York Central. In a 14-page petition filed with the ICC, the Central asked the Commission to institute a general investigation aimed at establishing ground rules for railroad mergers in the East.

"Studies made by the Commission more than a quarter of a century ago are now out of date," NYC said, adding that the present case-by-case approach virtually precludes adequate consideration of the public interest."

Apart from suggesting that "public interest requires that a new study be made," the NYC did not elaborate on why it had filed the petition at this time. There was speculation that the fast-moving C&O-B&O courtship was a factor, and virtual confirmation of this came within 24 hours after the Central's petition went to the ICC.

Late last Tuesday, NYC issued the following one-sentence statement: "Alfred E. Perlman, president of the New York Central, announced today that he has called a special meeting of the Board of Directors of the company for Friday, June 24, to discuss a proposed

offer to be made to shareholders of the Baltimore & Ohio."

Again, the Central declined further comment. The statement itself, however, suggested two possible alternatives. The NYC board could, after discussion, decide against any offer to B&O; or, if an offer is made, it would cast B&O in the bridal role of having two suitors.

Meanwhile, the C&O last week was progressing along lines previously indicated, in which that road would acquire control of B&O by exchanging C&O stock for all B&O shares outstanding (RA, May 23, p. 9).

The C&O filed two applications with the ICC last week—one, seeking authority to acquire control of B&O with the exchange of stock; the other, asking authority to issue sufficient new shares of stock to handle the exchange. Slightly more than 2,000,000 C&O shares would be required.

Just how NYC would handle its offer to B&O shareholders, should it decide to make one on June 24, remains an open question. C&O's offer has already been transmitted to B&O stockholders by President Howard E. Simpson. B&O management might or might not elect to do the same thing with an NYC offer.

The apparent public confusion over the status of the three roads stemmed, in part at least, from public statements issued over the past four weeks. Early announcements by B&O and C&O did not mention NYC; but at NYC's annual meeting in Albany, N.Y., on May 26, Mr. Perlman said studies with the other two roads were continuing "with the idea of joining them in a mutually satisfactory arrangement."

In a broader sense, however, a merger embracing any of the three roads could not be divorced from other merger ideas being progressed in the East. No road wants to be left in relatively weaker position by standing aside while competing lines merge. Moreover, as NYC asked in its petition to ICC, what are the responsibilities of such newly-created systems in maintaining or absorbing so-called weak lines?

The other eastern merger plan that shared the news last week was between two strong carriers—the Norfolk & Western and Nickel Plate.

Following a special meeting in Philadelphia last Monday, N&W President Stuart T. Saunders and NKP President Felix S. Hales announced agreement on merger terms which, if finally approved by all parties, would make N&W the surviving company.

The agreement is contingent on obtaining a physical connection between the two roads and it is understood that this connection may be provided via PRR's 111-mi line between Columbus, Ohio, and Sandusky. Mr. Saunders said the line might be acquired outright, or, as an alternative, trackage rights could be sought.

The basis for the N&W-NKP merger plan is an exchange of stock—one share of Nickel Plate common for each 0.45 share of N&W common. If consummated on this basis, NKP shareholders would emerge with a 20.3% interest in N&W. The Pennsylvania presently has around 33% interest in N&W, but the Pocahontas line operates entirely independently.

### N&W-NKP Merger at a Glance

A	lorfolk & Western	Nickel Pla	te Total
Locomotives	593	441	1,034
Freight train cars	81,006	28,014	109,020
Passenger train cars	286	88	374
Work equipment units	1,559	801	2,360
Operating revenues 1959	\$247,000,000 \$1	50,408,000	397,408,000
Net income 1959			74,000,000

Compiled from 1959 annual reports.

# Rules Talks Set for Early July

Preliminary discussions on the railroad work rules dispute will probably be held during the first week of July in Chicago. Chief executives of four of the five operating brotherhoods propose meeting July 5, 6 or 7.

The four-Guy L. Brown, BLE; H. E. Gilbert, BLF&E; W. P. Kennedy, BRT; and J. A. Paddock, ORC&B-made the proposal in reply to letters from the carriers asking appointment of organization committees to negotiate on the rules issue. Their answer made no mention of committee

Wednesday, July 6, appeared to be the most logical date for the preliminary session. Conceivably, the complex negotiations on the work rules dispute could make at least a beginning before the last of the wage disputes is settled.

As of last week, only two organizations-BLE and ORC&B-had reached agreements with the carriers on wages (the Engineers by arbitration, the Conductors by accepting the BLE pattern). Both the BRT and the BLF&E have received offers based on the pattern; the SUNA, arguing against application of the pattern to its own case, is winding up hearings before an emergency

Meanwhile, the ORT convention in Chicago provided a platform for several union leaders. G. E. Leighty, ORT president and RLEA chairman, took the industry to task for not going after business with sufficient vigor. George M. Harrison, president of the Clerks, rapped the non-op emergency board findings (RA, June 13, p. 9). Then came Mr. Brown, swinging along in his next-to-last month as BLE grand chief and as optimistic as ever that both the carriers and the employees can benefit from an updating of working rules. He made these points:

· Labor must make sure that "our agreements don't cripple the railroads or handicap them in the competitive

(Continued on page 13)

### Watching Washington with Walter Taft

 DEVELOPMENT BY RAILWAY EXPRESS AGENCY of a sound basis for payments to railroads awaits repeal of what the ICC considers obsolete provisions of the 1916 Mail Pay Act. That's what the Commission has told a House Post Office and Civil Service subcommittee in supporting one of its pending legislative recommendations.

THE COMMISSION POINTED OUT that failure of Congress to act favorably on the recommendation could thwart implementation of REA's new agreement with the railroads. The agreement provides that the new plan for eventual payment to railroads on a car-foot mile basis is contingent upon enactment of the repealer -or of legislation to make the "obsolete" provisions inapplicable to express companies controlled by railroads.

THE "OBSOLETE" PROVISIONS are those which authorize the Postmaster General to ask the Commission for information as to railroad rates paid by express companies, and to demand rates on a like basis for transportation of mail, other than first class. Such requests have been made by the Postmaster General as maneuvers in various mail-pay cases of the post-war period.

THREE COMMISSION DENIALS-in 1949, 1954 and 1959-did not seem to deter the Postmaster General. So the Commission turned to Congress. Its recommendation for repeal was made first in its annual report for 1958, and repeated in its report for last year.

THE VIEW that the involved provisions of the 1916 act have become obsolete is in line with the railroad position. That position is that obsolescence came with

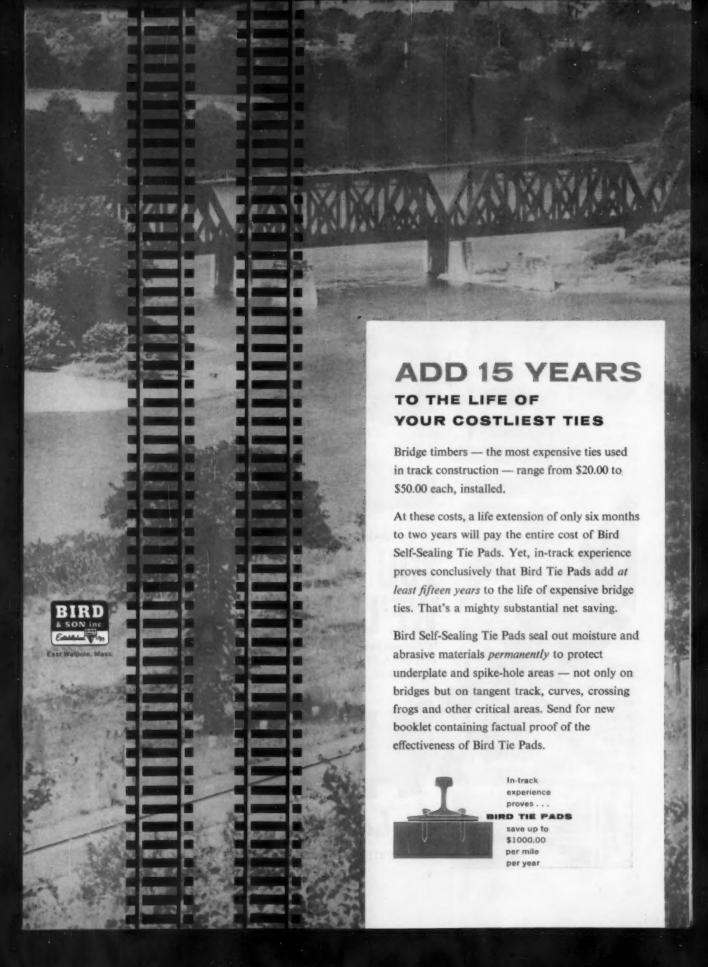
transfer of the express business from the former private companies to "the railroads themselves" for handling by their "common agent"-REA. Thus, there are now no railroad rates for transportation of express matter.

 TRACK-CAR BILL has been sent to the Senate calendar by the Committee on Interstate and Foreign Commerce with a recommendation that it be passed. The bill, sponsored by the Railway Labor Executives' Association and supported by the ICC, would give the Commission power to prescribe rules for the operation of track motor cars.

THE REPORTED VERSION contains what the committee majority considers an anti-make-work provision, to which RLEA did not object. It stipulates that nothing in the bill shall be considered as requiring any minimum crew, or prescribing a crew on any track car involved.

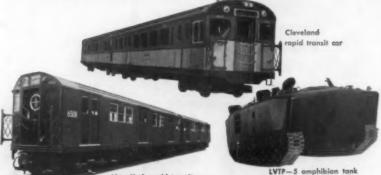
A MINORITY REPORT came from two members of the committee-Senators Thurmond of South Carolina and Cotton of New Hampshire. They opposed the reported bill because it would still "open the door to featherbedding." AAR President Daniel P. Loomis has issued a like warning, saying any "anti-make-work" provision would be "utterly ineffective" as a cure for the "featherbedding inherent" in the bill.

 RAILROAD EXPENDITURES for new plant and equipment are now being made at an annual rate of \$1.1 billion. The Department of Commerce's latest survey also indicates that the rate will be \$1.2 billion for the July-September quarter, less than 1959's thirdquarter rate of \$1.3 billion. The 1960 rates, however, are otherwise above those of last year.





Southern Pacific lightweight baggage and express car



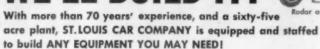
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# Accounting Role Emphasized

The railroads are facing a new eraand railroad accounting officers have become an increasingly essential part of the management team in a period of high costs and shrinking profit mar-

E. S. Marsh, president of the Santa Fe, emphasized the point in addressing the annual meeting of the Accounting Division of the AAR in Chicago last week.

He called upon the delegates to "stimulate clear thinking among your friends and associates." He said that the new era of competitive transportation, accompanied by a severe inflationary spiral, presents grave problems and great challenges: "I believe I have never seen a time when we face so many uncertainties.'

"Today," Mr. Marsh said, "we see on every hand that the failure of our government to adopt the plainly needed reforms recommended years ago is causing deterioration of earnings in the railroad industry and harming our efforts to take full advantage of modernization and technological improvements designed to give better service and keep costs to the public at the lowest

possible level."

He added that while there was general agreement that something must be done about the "deteriorating railroad situation," the only reason Congress never came to grips with the problem seemed to be that "they had a feeling that nothing could happen other than the effect upon the railroad industry itself, and Congress has not seemed to worry too much about that."

Emphasizing that harm cannot come to the railroads without doing great harm to the whole economy, Mr. Marsh warned that it is a slow deterioration but, if allowed to follow its present course, it could have an end result that Congress and the whole country might wish to prevent-the eventual end of private ownership of the railroads, then of other agencies of transportation, and perhaps other businesses.

This is a time, said Mr. Marsh, "which demands good, clean, comfortable passenger service; that puts emphasis on fast, dependable freight service and intensified efforts to reduce cost of operation and maintenance; an era where we must recognize the inaction of Congress to give us fully adequate remedies to provide competitive equality with other forms of transportation; a keenly competitive era in which we must do more things to help ourselves-service-wise, rate-wise and cost-wise."

To attract more business and effect more efficient utilization of the railroad plant, he said, the railroads must provide a good service and competitive rates. "Costs for rate-making purposes should be realistic and forward looking, based upon the increased volume that could be attracted rather than upon statistics of the past without inclusion of that volume. Only in this way can the railroads achieve their full potential and the public receive the benefit of the most economical form of transportation."

Following the address by Mr. Marsh, the delegates began hearing and adopting reports of 11 standing committees. They also heard addresses by Wayne Irwin, vice president, AAR; and by C. J. Jump, senior vice president, Rail-

way Express Agency.

Like Santa Fe President Marsh, Mr. Jump posed the problem of continuing deterioration of the situation leading to an end of private ownership. Talk of nationalizing transport, he warned, "is not just idle talk"-and the first real test may be occurring now with Railway Express, which is strenuously attempting to compete successfully with federally-operated and subsidized parcel post service.

Retiring Accounting Division Chairman W. G. Hunt, ATSF vice president and general auditor, told the delegates that "today, thanks to our modern office equipment and particularly to electronic data processing we have greatly reduced the volume of unskilled pick and shovel work in our accounting departments and we have constantly added to the activities requiring mental capacity and ingenuity . . .

"I think of these developments as

upgrading our people so that our work is performed far more accurately and expeditiously than ever before.

'I have always thought of accounting as an art rather than a science. I admonish all . . . not to let themselves become complete conformists, completely pseudo professionals or scientists. Maintain self-respect and satisfaction in daily work. Never abandon that touch of the artist which must be in the make-up of any true accountant."

Officers elected for the coming year are: chairman, R. J. Wagner, comptroller, L&N, Louisville, first vice chairman, H. J. Ward, comptroller, PRR, Philadelphia; and second vice chairman, John A. Tauer, vice president and comptroller, GN, St. Paul.

### **CNR Highway Subsidiary Buys Five Trucking Companies**

Canadian National Transportation. Ltd.-the highway transport arm of the Canadian National System-has completed stock purchase agreements with four trucking concerns and taken an option on a fifth. The purchases will extend CNT's highway services over an additional 15,000 route miles in seven provinces.

In announcing the new acquisitions, CNR Executive Vice President N. J. MacMillan emphasized that Canadian National Transportation is to be operated as a completely separate entity. Similarly, the trucking companies will continue to be operated as separate corporate entities. They will function within the trucking industry under the same ground rules as any in-

dependent trucker.

### RULES TALKS SET (Continued from page 10)

race" with other forms of transport.

- This doesn't mean that unions should surrender hard-won gains. Engineers, too, have lost jobs in the postwar period and the adequacy of their protection is a matter of some concern. But while the organizations must strengthen and improve their agreements, they "can also enlarge [their] point of view . . . and consider what is good for the industry in the long
- Change and progress is the order of the day-and "revision is bound to come. . . . If we're intelligent enough and flexible enough, that revision will be wise and fair. . .

C&O President Walter J. Tuohy

underscored the need for managementlabor cooperation. He told ORT delegates that the "leadership of John L. Lewis and his far-sightedness in encouraging progressive modes of mining have placed the Amercan miner head and shoulders over his counterpart in other countries. . . . Although he has always fought tooth-and-nail for the betterment of his men, he has worked just as diligently in working with management for the advancement of the industry as a whole. I hope to see the day when the railroad industry, management, the brotherhoods and kindred groups will, likewise, walk down the path together to advance the cause of railroading to our common advantage."

# Broader Outlook, Technical

➤ The Story at a Glance: Technical improvements, factors to be considered in their adoption, and economic obstacles to wider use of modern equipment provided the subjects for debate and discussion during the AAR Mechanical Division and Electrical Section meetings in San Francisco.

Topics ranged from diesel-hydraulic and coal-fired gas turbine locomotives to improved freight-car utilization.

The meetings also heard the SP's D. J. Russell emphasize the need for inter-departmental cooperation.

"Fourth-dimensional thinking," unencumbered by purely departmental considerations, was stressed as vital for railroad mechanical and electrical officers meeting in San Francisco last week.

Southern Pacific President D. J. Russell told a joint session of the AAR Mechanical Division and the Electrical Section: "Certainly you and other specialists in the various specifics of railroading have done well within the conventional dimensions of your particular jobs . . . The fourth dimension I speak of is that of thinking, not just in terms of the job itself, but in terms of how it relates to the over-all forward movement of the industry."

During technical sessions, both the

Mechanical Division and Electrical Section took actions which gave evidence of the increasing inter-departmental cooperation which present-day railroad managements are fostering.

Problems of piggyback, high wheel loads, new locomotive designs and special car designs were typical of those considered. The bearing of each of these problems on more than one of the traditional departments was discussed in each case.

What is needed, Mr. Russell told the meeting, is thinking "that embraces a broader knowledge of the objectives and problems of the traffic people, the transportation people, the engineering people, and many others so that you can most effectively gear your work with theirs to the ultimate ends of attracting more business and building net profits.

"Use of cheaper fuels is an example of how the broader outlook must go beyond departmental lines. Viewed purely from a mechanical department standpoint, lower grade fuels on the SP have increased locomotive maintenance costs some \$600,000 a year. But viewed in terms of the welfare of our company, these cheaper fuels are saving \$2,600,000 in annual fuel costs. Even with the increased maintenance expense, there is a net annual saving of \$2,000,000."

Application of the broader viewpoint by mechanical officers is necessary in numerous ways, Mr. Russell said. Greatest ultimate benefit for the company must be considered in each of the following:

 Careful study of over-all savings on projects for which capital expenditures are recommended.

Elimination of property and equipment no longer utilized.

Seeking of opportunities to broaden services into new forms of transportation.

 Seeking of new ideas from beyond the limits of the individual department, beyond the individual railroad, and beyond the railroad industry itself.

 Development of industry leaders who can move forward in the face of problems of ever-increasing complexity.

Steady expansion of research programs.

Mr. Russell cited piggyback as a case where "a little ingenuity" has produced a great snowballing of business, either new or previously lost to highway car-

### Motive Power Revolution on the Way?

Early in 1961, two new types of motive power will be on U.S. rails: The Southern Pacific and Denver & Rio Grande Western will each get three German-built, 4,000-hp diesel-hydraulic units; the Union Pacific will have completed its experimental coal-fired gas turbine locomotive (RA, Nov. 23, 1959, p. 9).

The diesel-hydraulics, ordered from West Germany's Krauss-Maffei, are 144-ton units developing 98,000-lb starting drawbar tractive force, with 33% adhesion. Power from two 2,000-hp diesel engines operating at 1,500 rpm is transmitted through fully automatic torque converter transmissions. The units will have hydro-dynamic braking similar to the electro-dynamic braking of diesel-electric locomotives.

SP President Russell says his railroad plans to test its units both in high-speed, heavy-duty freight service and in slower-speed mountain service. If the tests are successful, it is anticipated that similar units could be produced in the U.S. by domestic builders, according to the SP president.

The UP is building the coal-fired gas turbine locomotive at its Omaha shops. It will consist of a modified diesel-electric lead unit, the coal-fired gas turbine B unit, and a converted steam locomotive tender with a 54-ton coal capacity. In addition, the tender will carry 2,000 gallons of emergency oil fuel in its under-frame.

The lead unit is a modified Alco 2,000-hp passenger diesel with freight gearing. The present control stand is to be replaced with a 20-notch turbine control modified for multiple-unit operation. The B unit will be the gas turbine unit which uses the carbody and running gear of a retired Great Northern straight electric locomotive purchased by the UP. Eight of the twelve axles will be powered.

The turbine will be one of the gas turbines presently used in a UP 4,500-hp oil-fired gas turbine locomotive. In event of failure of the coal-handling equipment, the gas turbine can be run at full power on oil fuel.

# **Progress Topics At Meeting**

riers. The successful SP pipeline between Los Angeles and El Paso is another example of adapting to the changing needs of customers, he said. "Our employees as well as our stockholders have profited by construction of the pipeline. The contribution which the pipeline operation has made to overall earnings has helped us to stay competitive in many fields, and to draw other business to the railroad."

"I have no doubt," Mr. Russell concluded, "that with continuing expansion of the fourth-dimensional kind of thinking, we can share fully in the vastly expanding market for transportation services, and that we can do it at the fair rate of net earnings which we so urgently need to insure our future welfare."

"There could never be a more discouraging approach to car rental" than the present uniform per diem system, D. W. Brosnan, Southern vice president—operations, told the mechanical officers last Wednesday. The \$2.88 daily rental for all types and ages of freight cars is a "tremendous brake" on efforts to provide proper equipment, Mr. Brosnan said.

He called for revision of the present system to give proper compensation for initial investment, capacity and the age of each car. Condition of the car, whether old or new, should also be a factor, he said.

The present uniform rental makes railroads keep out-of-date cars in service to recoup losses they incur by having modern cars interchanged. The \$2.88 figure will not cover the ownership costs of such modern equipment as the hydracushion car or the aluminum covered hopper.

Mr. Brosnan urged increased car utilization and told of Southern efforts in this field. By arranging with an Alabama public utility for rapid unloading and consequent rapid turnaround, for example, the Southern is moving 5,000 tons of coal daily on a 140-mile haul with only 90 100-ton cars. The road estimates it would take more than 450 70-ton hoppers if this movement were handled in the traditional manner.

The new arrangement makes profitable a movement of a bulk commodity at a substantially depressed rate. Each car's revenue is \$18,000 annually.

No other railroad expense approaches the cost of car ownership, Mr. Brosnan said, urging mechanical officers to intensify their efforts to get greater use

and more equitable compensation for the U. S. car fleet.

For the first time, details of two new locomotive designs were revealed. Mr. Russell and S. M. Houston, general mechanical superintendent of the SP and chairman of the Mechanical Division, discussed the 4,000-hp dieselhydraulic units which the SP and the Denver & Rio Grande Western have ordered from a German builder. Details about the coal-fired gas-turbine locomotive which the Union Pacific has under construction at its Omaha shop were disclosed by the Locomotive Committee. The UP locomotive is to be in service early next year.

Chairman Houston listed a series of problems on which the Mechanical Division has been placing great emphasis:

- Improved braking methods.
   Evaluation of lubricators as replacement for loose packing in journal
- Revision of AAR loading rules in loose-leaf form.
- Establishment of standards and interchange agreements for piggyback equipment.
- Simplification of AAR billing procedures.

Mr. Houston called on the Division to formulate minimum necessary working rules for safe operation of railroad rolling stock. These, he said, should be the foundation for a much-needed revision of the 1911 rules and inspection laws that are the basis for much of the present-day ICC equipment regulation. He said cooperation between the Division and the Interstate Commerce Commission has been excellent, but that regulations based on operations with steam locomotives in 1911 are unrealistic in the face of present-day operations.

At the concluding session of the Mechanical Division meeting, J. W. Hawthorne, chief mechanical officer of the Atlantic Coast Line was elected chairman of the Division. J. A. Welsch, general superintendent motive power of the Illinois Central, was elected vice chairman.

The Division also voted to consolidate ten of its technical committees into five in the interests of economy and simplification.

Greater reliability of diesel-electric locomotives is a goal toward which the Electrical Section must strive, W.D. Lamprecht, general manager of the SP, warned that group.

The problems of making electrical equipment more failure-proof, of finding ways to locate electrical troubles more quickly, and of striving for greater simplicity of design and standardization of parts on both locomotives and cars must be met, he emphasized. In the case of locomotives, if these problems go unsolved, the alternative could be the adoption of mechanical or hydraulic drives, Mr. Lamprecht said. "A basic consideration in the purchasing of the German diesel-hydraulic units for test was the frequency of electrical failures on our present locomotives," he concluded.

P.B. Burley, superintendent of communications and electrical engineer of the Illinois Central, was elected chairman of the Electrical Section.



J. W. HAWTHORNE



J. A. WELSCH



# LEADERS IN INDUSTRY AND FOR NEW AND BETTER WAYS

More than 8,000 major shippers and receivers of freight in North America have reduced costs, eliminated damage and improved transportation conditions by use of Evans-designed equipment.

Since 1915 Evans has supplied railroads with damage-prevention equipment and has helped industry to reduce shipping costs. The tremendous popularity of Evans equipment with both railroads and shippers is proved by the fact that Evansequipped cars are owned by 62 carriers and the Armed Services.

Railroads provide Evans-equipped cars to shippers at no extra charge. Because Evans-equipped cars reduce damage claims and permit heavier loads, they are constantly in demand, and in use—which means greater profits for railroads and greater shipper satisfaction. Evans has a nation-wide network of offices, with loading engineers who are ready to help shippers and railroads solve damage problems. For complete information, write Evans Products Company, Dept. E-7, Plymouth, Michigan.

### **EVANS DAMAGE-PREVENTION EQUIPMENT INCLUDES:**

- DF®. . . A permanently installed device that locks lading in boxcars for dunnage-free, damage-free transit.
- RB-DF... An insulated DF-equipped car designed for the safe transit of products that cannot stand extreme temperature changes.
- Adjustable DF... A DF-equipped car with Movable Belt Rails for greater flexibility in vertical adjustments.
- DF Gondola (open or closed) . . . Developed to meet the special needs of certain industrial shippers.
- QL... Movable bulkheads permit sectionalizing of load. Swing to roof when not in use, allowing free access in loading and unloading.
- RB-QL . . . An insulated QL-equipped car.
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- Coil Car... A car specially designed to protect coils of steel from load shifting and weather damage.

EVANS PRODUCTS COMPANY also produces: "Evanite" battery separators, plywood, hardboard and Plywalle paneling; truck and bus heaters; bicycles and velocipedes; "Haskelite" Plymetle panels, building panels and doors

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PLYMOUTH, MICHIGAN



# RAILROADS LOOK TO EVANS TO PROTECT LADING IN TRANSIT



DF LOADER—the "Kid Glove Treatment" that locks in lading.

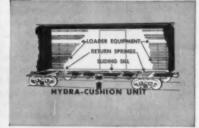
AUTO-LOADER T.M.—allows fast, safe loading of four automobiles per boxcar.





DF GONDOLA—designed for safe transit of extra-heavy industrial lading.

HYDRA-CUSHION UNDERFRAME—hydraulically cushions load, preventing damage.





QL® CAR MOVABLE BULK-HEADS—are easily unlocked, lowered and secured tightly against load face.



### Southern Plans Container Test

The Southern, which has thus far remained out of the piggyback parade, is now planning what its president, Harry A. DeButts, calls "a pilot operation," with containers on flat cars. As Mr. DeButts indicated at the road's recent annual meeting, Southern prefers the container-on-flat-car idea to the trailer-on-flat-car method.

Plans for the pilot operation are set out in a proposal (A5796) which has been docketed with the Southern Freight Association. They contemplate issuance of a tariff publishing all-freight rates for shipments in not more than two containers on a flat car between Atlanta, Ga., and Greensboro, N. C., and Chicago.

(According to industry sources, initial plans call for the use of Flexi-Van equipment obtained on per-diem rental from other railroads.)

In his annual-meeting statement, Mr. DeButts described the proposal as one designed to provide service for a "large shipper." He also said the Southern's experience with it "will determine whether to go farther."

These statements by the Southern president were in response to a stockholder's question which asked about Southern plans, "if any," for instituting piggyback service. Mr. DeButts' reply first recalled that he had stated at previous annual meetings that the Southern has a "completely open mind

on the piggyback matter."

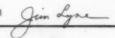
The reply went on to refer to how piggyback "has caught the public's fancy," and to the Southern's awareness of the "considerable volume" of freight now moving in piggyback service. He added:

"Our feeling is, and I think it is borne out by the experience of a number of railroads who went into this some years ago, that this so-called piggyback thing has been moving in the wrong direction and attention is now being shifted toward a container system—not on wheels, but containers, on flat cars, which could be put on trucks and delivered and unloaded and brought back to the railroad flat car."

### Railroading



After Hours with



MELON SEASON AT HAND-Milwaukee agent Gustafson at Anamosa,

Iowa, has relieved my ignorance, advising that watermelons are still being hauled in nice clean stock cars, as well as in reefers and ventilated box cars. My recollection is that the best watermelons there are (spherical in shape, dark green outside, and deep red inside) come from a place called Sand Springs, near Abilene, Kans. And, as for cantaloupes (called mushmelons where I come from), it is hard to improve upon the variety known as Rocky Fords. (I will withdraw this assertion on proffer of edible evidence to the contrary).

RR STAFF COLLEGE—The British railways have set up a staff college for middle management people—giving participants a 16 weeks' course of high level instruction in business organization, transport economics, human relations, and current problems of the British Transport Commission (which operates the railways). The college is housed in what seems to be a country mansion (judging from the picture in London's Railway Gazette), and is said to provide a "club atmosphere."

The set-up, particularly in the length of the course, is somewhat more extended than any parallel railroad program I've heard of on this side of the Atlantic—although similar refresher or "retread" education for management development is certainly no novelty with us. What we should do is provide this kind of schooling for the politicians. They are the people who manage the managers, and do so with no qualifying training whatever.

COSTS LESS BY RAIL—The man who drives into the "core" of a big city at peak hours pays less than 50% of the cost of the street and parking facilities provided for him—hence the community can afford to pay 50% of the cost of bringing the same fellow to town as a commuter by rail, instead, and be

money ahead. So argues John Bailey of the Philadelphia Urban Traffic & Transportation Board in a letter I've just read, in the London Economist.

Being a political and economic right-winger, myself, my feeling is that a better answer to this arithmetic would be to require the autoist to pay 100% of the cost of what he gets. If you did that, then it ought to be possible to charge the rail commuter 100% of the service's cost without chasing him away. So much for simple logic. But when politically minded people ask how you can induce voters to let you levy 100% of the cost of highway use on highway users—the answer doesn't come easily. Our system of highway finance has seduced people into socialism. How do you unseduce them?

A CHAPTER OF ERIE—The old "Grand Opera House" in New York—once the head-

quarters of the Erie Railroad, and the shenanigans of its then buccaneering management—is going to be torn down to make way for a housing development. In recent years this old theater, a symbol of grandeur a century ago, has served as a second-rate movie house. Jim Fisk, the road's high riding vice president back in the 1870's, used the premises not only for business, but also as a place of entertainment—until his escapades aroused animosities which led to his murder.

Knowing the Erie as I have in recent years—under the management of such high-minded gentlemen as Bob Woodruff, Paul Johnston, and Harry Von Willer—it's hard for me to imagine it as it was in the swashbuckling days right after the Civil War.

Some people like to ascribe a personality to a corporation—including the present generation in either praise or blame for the deeds of its predecessors. I've never gone along with this notion. I think each generation's reputation should be based on its own actions, neither being credited for its predecessors' accomplishments nor abused for their sins.

### Roller or Solid?...a bearing specialist's answer

Our belief is that both bearings have a job to do.

In general...as much new equipment as possible should have roller bearings—particularly, fast-freight, high-mileage cars. The roller bearing is the only *final* answer to the hot-box.

On the other hand, solid bearings will be needed on existing equipment for many years to come. Low in cost and rugged, they give excellent service.

For these reasons Brenco is the only manufacturer who makes both types and specializes exclusively in railroad bearings.

Brenco bearings...more than a million in service!



# Re-Dieselize and Save Money

➤ The Story at a Glance: Did dieselization and the virtual elimination of steam power clean up the last great area for sweeping economies in railroad operation? Perhaps—but the locomotive builders think perhaps not. And they aren't looking any farther than the motive power situation to find the promise of new economies.

At least one builder—GM's Electro-Motive Division—sees a potential for savings comparable to those realized in initial dieselization. EMD's angle: Redieselization—the replacement of existing locomotives with more powerful, more economical units.

Over the past year and a half, about 120 1,350-hp FT units have been turned back to Electro-Motive's La-Grange, Ill., plant on latest model, higher-horsepower locomotives.

Milwaukee has taken delivery on 52 1,750-hp GP9s to replace an equal number of FTs. Missouri Pacific is turning in 24 FTs for a like number of GP18s. Great Northern has replaced 18 FTs with 2,000-hp GP20s. And Santa Fe, which took delivery on its first EMD FT in January 1941, is acquiring 25 GP20s to replace part of its FT fleet.

Locomotive replacement—EMD's big hope for the domestic market—is based largely on a determination of the economic life of diesel-electric power now in service. And economic life involves two primary considerations:

 Advances in locomotive development since purchase of the older units in question.

 Factors related to individual road's power status—their need for additional capacity, their major overhaul scheduling, their desire for improved performance at lower operating cost.

EMD freely concedes that the practical life of a diesel could be 100 years or more, assuming consistent maintenance and proper operation. But the builder sees advantages in its replacement program that outweigh any advantages a railroad might obtain by

running the wheels off existing power.

M. H. Gardner, assistant general sales manager of Electro-Motive, puts it this way: "All we're talking is a replacement plan. As to how it fits individual railroads, that's up to them, up to their planning. What we have is a way to get the old locomotives turned in and a way to start earlier than you might expect to get the economic advantages of a new machine . . . We look on this as the future of the domestic locomotive business—not entirely, but principally."

Replacement advantages, according to EMD, fall into three major cate-

 Added capacity. Three GP20s will do the work of four 1,500-hp F3 units, a 33 1/3% capacity increase, unit for unit.

• Fuel economy—estimated at a 7½% improvement in specific fuel consumption.

• Reduced operating and maintenance costs. A major factor, of course, is that the GP20 is a new unit and the FT or F3 turned in may be working close to its second (or third) major overhaul. But, of equal importance, design changes have developed a product with components that require less attention, and the buyer benefits from what EMD terms reliability improvements.

Cost advantages, the builder points out, become more important if a road needs no actual increase in capacity. Here, three units will replace four and do the same work at less cost. Maintenance of one unit is completely eliminated.

"Within five years," Milt Gardner comments, "a railroad can have a replacement unit pay for itself, based on the cost of a new unit against the cost it's facing up to on the old unit... The return on investment is comparable to the return on replacement of steam with diesel—or it may even be better."

What does a railroad get in a replacement unit? "A new locomotive, containing a few long-life pieces from an older unit, remanufactured and modernized. The replacement is built on the new-locomotive production line."

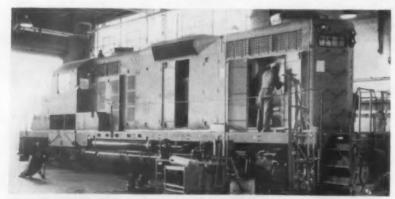
Components fall into three groups in the replacement plan:

• Those which are always reused—truck frames, or certain parts of the main generator (frame, armature core), for example.

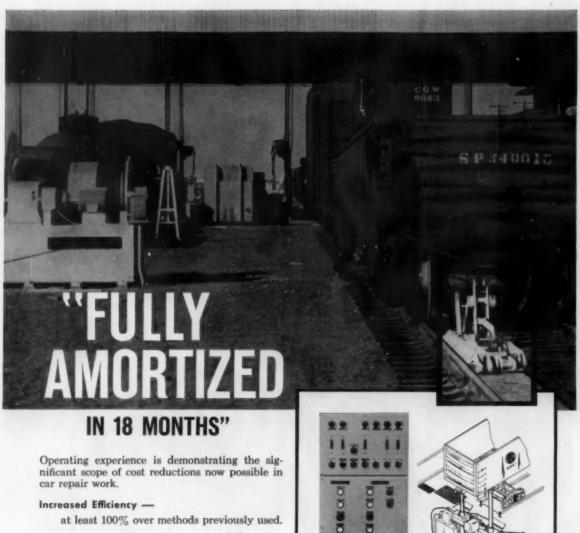
• Those which are always installed (Continued on page 24)



CUT-DOWN FRONT HOODS are "extras" on all of the 25 GP diesels ordered by Santa Fe under EMD's replacement plan.



ONE OF SANTA FE'S new 2,000-hp GP20 units undergoes final testing.



### Profits on AAR Billings -

"Three times as many AAR Repairs," one railroad reports.

### Reduction in Per Diem Costs -

Bad order delays have been reduced from 34 to 12 hours.

50% to 90% Savings in Switch Engine Hours.

May we discuss the Spot Car Repair System with you . . . or send a new, detailed 6-page bulletin?

Rabbits for car handling. Pushbutton control, all operations, from a centralized panel for each track. Jacking, accomplished hydraulically by traversing (illustrated) or fixed jacks - power for all jacks now from a single pumping system.



Railway Maintenance Corporation

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System Covered by Patents Applied for



# HEAVY REPAIRS at GREENVILLE

Upgrade Cars for Select Loading . .



These 50' 6" boxcars are now back in revenue service with reinforced underframes, new floors and loading devices. The pictures highlight the Greenville assembly-line techniques employed. They're different . . . perhaps the first of their kind.

As carloadings increase, you'll want your cars on the job earning dollars. Greenville can do the heavy repair jobs and keep your shops free for running repairs. Put Greenville to work planning and scheduling your needed heavy repairs . . . getting your car fleet ready to roll. Now's the time to get started. A single phone call clears the track.



On kedy ands straightened



Bodies are stored in abop area and are replaced on original under-



to frome is charged to special lig, stratghtoned, boister



Underframe on resembly has upside dawn a complete revening and inspection. Note addition to new 15" channel aide affi reinforcement ful



Down-hand welds secure body to underframe.



New floor, end lining and loading devices installed.



Completely repainted and ready for stenciling, the cars are on their way back to revenue service.

NEW CONSTRUCTION

HEAVY AND LIGHT REPAIRS

LEASING

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48 Years of Experience

new, regardless of condition of the old part.

• Those which are installed new if required-depending on condition of the old part.

The resulting unit carries a newlocomotive warranty and may be financed through any of the conventional financing methods.

What's the potential for replacements? Excellent, judging from the accompanying table, which shows the relative age of EMD power delivered to the railroads. But the economics of replacement are going to be strictly up to the individual railroad to decide -depending on size and age of the fleet, the overhaul cycle, the pace of original dieselization.

EMD doesn't figure, for example, that a road which bought 100 FTs within a few months' time in the 1940s is going to convert to GP20s in the same short period. Some roads may prefer to scrap old power and re-dieselize with all-new units of maximum horsepower. A number of roads won't be ready for replacements for some time, regardless of how they go about

Illinois Central, for example, has no freight power older than its GP7s; average age of Norfolk & Western's 529 units is 2.5 years.

### Trend Is Clear

The table shows almost 1.100 FTs and 1,804 F3s built during the years 1940-49. All are under 20 years old, but the entire group of FTs is more than 15 years old. EMD expects replacement of these units will make up the greater part of its business within three years. The trend is already pronounced-in April this year every general purpose and switcher locomotive turned out by Electro-Motive for the domestic market was a replacement for an old model turned in.

Still untapped, but coming up within the next five to 10 years, is the potential replacement of 1948-52 power -and those years were EMD's major production years.

Emphasis generally will be on freight power and on the workhorse GP20 as "the" replacement unit. It's possible for a railroad to turn in passenger power and yard units for replacement, but the potential is light. Yard power, EMD points out, operates at a low load factor; it's generally set up on a 25-year depreciation basis; there's less prospect of developmental changes shortening economic life; and there isn't the potential to use added capacity to reduce the number of units in service.

But if replacement becomes the major item Electro-Motive thinks it will, both railroads and builders will owe a debt to the lowly yard engine for showing the way: Replacement as EMD views it, really started with the 201Aseries switchers, which have been coming back quietly and without fanfare for about 10 years in exchange for higher-horsepower yard units.

Through the years in the evolution of the replacement plan, unit improvement has gone by many names-rebuilding, remanufacturing, upgrading, power renewal, among them. Method of improvement has varied-but the program has been held together by a factor which has run through EMD design since before the LaGrange plant was built: "Our components have kept capacity ever-increasing within the same physical perimeters.

The practice has been to build more capacity into equal-size componentswhich makes it possible now to take an old component and completely remanufacture and modernize it to 1960 standards, then re-install the part in the same space it originally occupied.

Naturally, with certain parts of the old unit reusable, the railroad turning in FT or F3 units on GP20s gets a price break-an advertised 10% off the cost of the new unit, plus allowances for the remaining value in the turn-in unit. The plan is set up to a point where EMD "can pull out of a locomotive the equivalent of its remaining

depreciated value and apply it to a new unit . . . and then set up a new base line from which to measure the economic life of the locomotive."

Here repair costs-and cost potentials-play a vital part. The newest of the FTs (1945 vintage) are approaching second-overhaul status, figuring a major overhaul every seven to eight years. Each overhaul brings costs down immediately, but they soon start up again to higher levels. Replacement shortly in advance of second overhaul, EMD figures, will enable railroads to (a) avoid the major expense of one overhaul; and (b) start with a new locomotive that costs significantly less to maintain.

### Backlog Is Ample

Many roads won't be ready for replacement power for some years to come. But the 178 FTs already turned in for GP units give the replacement plan a solid base on which to grow. The rest of the FT fleet, plus the F3s dating back to 1946 and the hundreds of F7 and GP7 units turned out in the early 1950s, provide an ample "backlog" on which the plan can operate over the next 10 years. (The biggest single power grouping, 3,721 F7s, will reach age 15 between 1964 and 1968).

Through last April 30, Electro-Motive had taken in 390 older locomotives and replaced them with modern power. The largest single group has been FTs-178 have come in and have been replaced by GP9, GP18 and GP20 units. The list also includes turn-ins of four F2s for GP9s; 39 F3s for GP9s; and 17 F7s for GP9s and GP18s (plus a variety of switcher, passenger and F-type units totalling 152 replacements.)

Dieselization seems to have run its course. From now on, barring introduction of a superior mode of power, the future (for builders and railroads, as EMD sees it) lies in consistent improvement of the species. And that connotes locomotive replacement.

### Number of EMD Diesels Delivered to Railroads—1941-1953

Model	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950*	1951	1952	1953
FT	47	96	184	500	267	*****	******	*******	******	*******	*******	******	******
F2	*******	*******	******	******	*******	104	******	*******	*******	******	******	******	******
F3	******	*******	*******	*******	*******	111	608	899	186	*******	******	******	******
F7	******	*******	********	*******	******	*******	*******	4	934	1,023	874	661	225
BL		******	******	*******	*******	******	*******	37	22		******	*******	*******
	47	96	184	500	267	215	608	940	1,142	1,023	874	661	225

### NOW! 3 NEW SERIES CAT MOTOR GRADERS...







# Big improvements in design and power keep each of these Motor Graders out front in its class!

New, compact engines . . . incorporating the latest in metallurgy and technology . . . provide greater lugging ability in tough going, easier servicing, high production and long life. Other important features effective with the new series are the vertical starting engine, for all-weather starting . . . the dry-type air cleaner, removing 99.8% of airborne dirt, cutting maintenance time ... as well as other important changes. The oil clutch ...long a big feature on the No. 14 and No. 12... now becomes standard on the new series No. 112s. A Caterpillar exclusive, the oil clutch provides up to 2,000 hours' service without adjustment. Excellent operator visibility, smooth mechanical blade controls and ample throat clearance are other retained features now standard throughout the line. Quality features designed towards dependability and greater performance.

Contact your Caterpillar Dealer for more informa-

tion on the new Motor Grader that best fits your rail-road job: the established 150 HP No. 14; the new series No. 12E and the No. 112E; or the latest addition, the Turbocharged No. 112F. He will point out the new features that interest you most, or set up a demonstration on your job. Dealer outlets, located conveniently throughout the country, practically eliminate the problem of parts and service. Another plus feature, when considering Caterpillar!

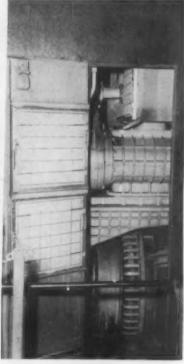
Caterpillar Tractor Co., General Offices, Peoria, Ill., U.S.A.

# CATERPILLAR Cotarpillar and Cut are Registered Tradomarks of Colorgillar Tractor Co.



# **New Products Report**







### **New Data Processors**

A small computer, the 301, and a large one, the 601, have been introduced by RCA to complement the medium sized 501 now in service. All are completely transistorized. The 301, designed for small or medium size organizations, features a "juke box" memory unit holding 128 magnetic recording discs for a capacity of 41/2 million data characters. The discs may be rapidly interchanged or erased. Up to five disc files and 12 tape stations may be used. The 301 data processor can incorporate up to 20,000 characters in its core memory. The large 601 computer is suitable for both business and scientific applications and is capable of handling the paperwork of the largest corporation. On the 601 a combined input-output data rate of up to 50,000 words per second can be achieved, with a memory cycle of 1.5 millionths of a second. An expandable modular design is also featured which allows expansion of speed, capacity, or function. Radio Corporation of America, Dept. RA, 30 Rockefeller Plaza, New York 20.

### Class Fiber Air Filter

The AMER-kleen filter is a replaceable glass fiber air filter for dieselelectric engine intake, carbody and main generator applications. The filtering media has progressively increasing density from air inlet side to air outlet side, which, the manufacturer says, permits the filter to trap dust and dirt in every part of the pad.

According to the manufacturer, pads are made from continuous interlaced fibers to provide high tensile strength and to eliminate the possibility of glass particles blowing out of the filter into the engine. Pads use a special gel-type adhesive to retain dust and other loose particles. A simple visual check tells when pads need to be replaced.

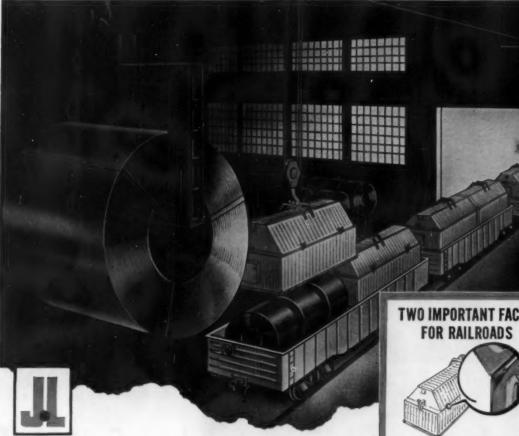
Use of the replaceable filters is said to offer economies in several areas: Replacement of pads is less expensive than maintenance of metal filters; filter cleaning equipment can be eliminated; efficiency of the units contributes to lower engine maintenance costs. American Oil Filter Company, Inc., Dept. RA-PD, 215 Central Avenue, Louisville 8. Kv.

### Thermoelectric Generator

A 10-lb power plant uses propane gas to produce electricity. The unit develops 10 watts, rated at 3 or 6 volts dc, but this can be stepped up to 10 volts or higher with a converter. Semiconductors convert the heat of the burning propane into electricity. It was designed to run a year on 200 lb (50 gallons) of propane gas. The power plant is 12 in. high. General Instrument Corp., Dept. RA, 65 Gouverneur St., Newark, N. J.

### Cement Car Cleaning

A method of cleaning cement bottles and covered hopper cars uses, basically, the Ripco portable air caddy with its vacuum suction unit. It is powered by a 32-hp gas engine. Cement is sucked out quickly and without dust through a 4-in. suction hose inserted into the bottle or hopper. The manufacturer says it is possible to clean 10 barrels of old cement out of a 5-bottle car in 12 min. Ripco Air Systems, Inc., Dept. RA, 251 S. Third St., Oxford, Pa.



### YOCAR HOODS HELP J & L SOLVE SHIPPING PROBLEMS

Use of Yocar hoods on shipments of high quality steel coils provides savings of "\$25 to \$30" per car loading according to JONES & LAUGHLIN STEEL CORPORATION, ALIQUIPPA WORKS DIVISION, ALIQUIPPA, PA.

Costly dunnage and paper wrappings are eliminated - damage claims show drastic reduction - and the perfectly balanced YOCAR HOODS permit easy positioning with minimum manpower. Positive protection from weather, dirt and vandalism is also provided.

Helping you SHIP SAFELY AT A SAVINGS is YOCAR'S goal. Why not do something about your profit-reducing shipping problems? Specify YOCAR protection next time you ship by rail.

OTHER YOCAR SAFETY **DEVICES**  Safe-Cargo Anchor Rails for piggy-back trailers

Yocar 3-section Removable

Yocar Safe-Cargo Econo-Guard increases car wall life

**RoLLoK Movable Bulkheads** 

YOUNGSTOWN STEEL CAR CORPORATION . NILES, OHIO

## TWO IMPORTANT FACTS



SEAM-LOCK construction eliminates upper welded seams, where water accumulates, insuring weather-tight protection throughout the hood life. Added strength to the entire hood is achieved due to the rigidity and durability of SEAM-LOCK'S design.



CORNER-STRENGTH . corner construction makes YOCAR hoods the strongest and best constructed hoods available today. Double backing on each corner insures longer service life, for it is here that gondola hoods take the most constant beating from humping and shifting in transit.



Send for new catalog today and see how Yocar can help you solve your shipping problems.



SLIPPAGE of upper stratum of rock cut (note displacement of drill hole), is pointed out by Roy W. Stane to Ernest S. Marsh (right), Santa Fe president, and two stu-

dents from Nebraska University. Mr. Stane is the road's construction engineer for the line-change job, largest of its kind in the U.S. for many years.

# Students Impressed by Santa Fe

➤ The Story at a Glance: Does a career in railroading still offer challenge and opportunity for civil engineering graduates? Students interested in knowing the answers are taking advantage of an invitation from the Santa Fe to inspect the 44-mile line change the company is building in Arizona.

First inspections, held during Easter vacation, brought 33 civil engineering students from six universities. Other groups are scheduled to tour the project through early July.

"Many of today's civil engineering students have the idea that current rail-road operations offer them no challenge and little opportunity," says R. H. Beeder, chief engineer, system, Santa Fe.

"Nothing," he adds, "could be further from the truth."

By way of demonstrating the truth of the latter statement, Mr. Beeder invited junior and senior civil engineering students and faculty members from colleges and universities in Santa Fe territory to visit one of the road's construction projects. The invitation stated

that they would be guests of the Santa Fe, including meals and lodging, for a two-day tour during either their Easter or Summer vacations.

The project chosen for the inspection trips is a 44-mile line change now under way in northern Arizona (RA, Mar. 14, p. 28). Costing \$20 million, the new double-track line will extend from Williams to Crookton and eliminate 2% grades, 10-deg curves and a tunnel on the existing line between those two points. It will be a high-speed line with automatic train stop and remote, electrically controlled switches and signals at crossovers to permit traffic reversal on each track. The track throughout will be laid with continuous welded rail.

"We felt a visit [by the students] to this major engineering project—largest of its kind in the United States for many years—would be awakening," said Mr. Beeder.

A total of 33 students and 2 professors accepted the Santa Fe's invitation to visit the project in April. Included were 9 students from Bradley University, 2 from Nebraska University, 5 from Kansas State University, 8 from Colorado University, 4 from Texas Technological College, and 5 from Texas Western College. Three tours were conducted between April 12 and 20.

In addition, seven students from Arizona State College, about 30 miles from Williams, recently spent a day inspecting the job.

Three additional tours have been scheduled this summer between June 14 and July 6. Students and professors have signed up for these tours from Purdue University, the University of Arizona, the University of Texas and a second group from Texas Tech. All told, it is estimated that about 75 students will inspect the big project.

Each visitor to the project is given a kit of informative material, including maps, career information and a reprint of the article published in the March 14 Railway Age.

Since the end of the April tours, Mr. Beeder has received numerous letters of appreciation. Several of the students already have indicated an interest in a railroad affiliation after graduation.



OPERATION of soils-testing laboratory is explained by Engineer Charles Houser to students from Bradley University.

# Line Change



ROCK CORE brought up by drill rig is discussed by Chief Engineer R. H. Beeder. Students here are from Kansas State University.

"GRAND FINALE" of one two-day tour over the big construction project was the detonation of 50,000 lb of high explosives. Inspection trips will be continued until early in July.

June 20, 1960 RAILWAY AGE



## **Communications Section Hears**

The Story at a Glance: Microwave and data communications were major topics of discussion at last week's convention of the AAR Communications Section. Planning for microwave, and specifications for a microwave stem, were subjects of committee reports. Other papers dealt with data transmission over telephone lines and the economics of data handling.

The railroad industry's renewed interest in microwave, particularly active in the last year or two, was pointed up sharply at the annual convention of the Communications Section in Detroit last week.

As Chairman H. W. Burwell, L&N communications engineer, put it in his opening address: "More and more, the railroads are calling upon their communications departments to furnish facilities requiring an enlarged communication plant. With the limited wire facilities provided in the past we are forced to turn to the new electronic systems, either carrier or microwave."

It was this growing interest in microwave that led the Communications Section last year, during its Cincinnati meeting, to order the preparation of committee reports on (1) planning a microwave system and (2) specifications for such a system. These reports were presented last week.

### Microwave Balance Sheet

From these reports, the following plus factors emerged:

 A properly designed, installed and maintained microwave system has proved to be more dependable than an equivalent wire line system.

(2) Generally speaking, microwave provides a higher quality signal.

(3) Microwave systems are inherently large capacity systems.

(4) The microwave system does not suffer from many of the maintenance problems which are encountered in wire line operations, since microwave maintenance is concentrated at a limited number of locations rather than being dispersed over the full extent of the railroad.

(5) Microwave stations provide a convenient means to facilitate application of VHF radio, hotbox and dragging equipment detector units, and other protective devices. Various types of detector equipment can conveniently be connected through channels of the microwave system to central points.

Minus factors include these:

(1) Difficulty in providing direct

service to local offices, such as way stations and telephone pole boxes or signal equipment.

(2) Difficulty in reaching a dropout point (station to be served) from the main microwave system.

(3) Personnel with special training will be required to maintain the microwave equipment.

(4) Certain types of interference may cause transmission errors.

(5) It would be difficult to restore service should a complete station be knocked out by a flood or an earthquake.

(6) Installation of microwave systems requires FCC authorization, which is not necessary for wire line systems.

(7) Proper selection of frequencies is most important and requires coordination with other microwave users in the same general geographic areas.

### Point-to-Point Radio

The tremendous growth of mobile VHF radio precludes extensive use of the 30- to 300-megacycle frequency spectrum for point-to-point radio com-

### SR Plans 637 Miles

Largest privately-owned microwave system in the U. S. is scheduled to go into operation late next year on the Southern between Washington, D. C., and Atlanta, Ga.

President Harry A. DeButts said last week the railroad has placed a \$5.3-million order with the General Electric Co. for "newly developed multi-channel transistorized microwave and two-way radio communications system" for the 637-mile route. Work will begin as soon as an FCC license is granted.

The new communications system, consisting of 54 microwave stations, will replace Southern's telephone and telegraph pole lines between Washington and Atlanta. For the last four years Southern has operated 134 miles of microwave communications in south Georgia and north Florida.

Mr. DeButts said the new system "will make it possible for Southern to extend its infra-red ray hotbox detection system, which will further enhance the railway company's safety program".

munications, Federal Communications Commissioner John S. Cross told the convention. He said the number of radio transmitters in this frequency range increased in 1959 from 345,000 to 445,000. The great need for mobile communications-by, for example, railroads and taxi companies-plus technical limitations imposed on design of mobile radio equipment, has made it necessary for the 30- to 300-MC range to be devoted extensively to mobile communications. Mr. Cross suggested that point-to-point communications could be secured in the 460-470-MC range. If one frequency for a fixed station is not enough he noted, application to the commission can be made for a second frequency. Point-to-point communications, other than microwave, might also be secured in the 27-MC range, but here frequencies are shared with others and there is no protection from interference.

As for interservice cooperation, Mr. Cross said the commission, after securing evidence from users, believes separate frequencies should be assigned for particular services in the 25- to 890-MC range.

Expansion of maritime services has been given preference over land transportation services so far as some frequencies are concerned, because, Mr. Cross said, some maritime services are international in scope. A recent worldwide conference at The Hague on maritime radio has resulted in setting aside a pair of frequencies (157.00 and 1616.60 MC) for universal duplex port operations. Railroads operating in the 161.61 MC frequency will have to vacate that frequency by May 1, 1961.

Noting the great interest railroads have shown in microwave, Mr. Cross pointed out that a hearing was held in 1959 on future microwave needs of particular users, but the FCC has not issued any specific ruling.

### **Data Transmission Studies**

Paul A. Flanagan, superintendent of communications, C&O, talked on some of the economic aspects of transmitting data for C&O's CLIC operation. Having selected the document, the train waybill, and the data processing system, "we were ready for the simpler things... like how to transport data on some 4,500 or more cars a day from 275 separate locations to a data handling center, and at the same time deliver one or two lines of information on all cars passing from yard to yard prior to train arrival. It is almost impossible to

## Pros and Cons of Microwave

obtain exact information on all of the pertinent factors related to such projects . . . in an industry like a railroad with a continuous assembly line several thousand miles long, operating 24 hours a day the year round."

Early in the study a Teletype network was recommended as the communications link. The project was then broken down into the categories of input, output, processing, distribution, and labor implications. Then each of these was further subdivided for valuation. For example, "input" included points of pick up, volume expected, time available for data preparation, and tolerable delay in transmission.

### Time and Cost Considered

As a general rule it was found there was adequate time at the originating terminal to prepare and transmit consistent data to the next intermediate yard. At all intermediate yards the switch list could be prepared from the advance information and data prepared for cars to be picked up. That was as far as they could go until the train actually arrived and enroute pickups and setoffs could be determined. Based on current train operation and required data for the processing system, a word count allowed determinations of tape preparation and transmission time. The cost of leasing the various types of equipment from the telephone companies was then entered into the computations. The approximate cost per line of information for the particular load requirement was:

\$0.017 for two 60-wpm (word per minute circuits).

\$0.011 for one 75-wpm circuit. \$0.013 for one 100-wpm circuit.

The possibility of using transceivers was studied and calculated to cost about \$0.028 per line of information compared to \$0.016 for equivalent Teletype service at 75 wpm.

In this particular study, labor costs at yard locations were not considered, as the operation did not require additional manpower or permit a reduction in existing forces. It was a case of engineering a work load to meet a labor situation, and obtain in the process a worthwhile by-product. The by-product was a Teletype tape suitable for line transmission and data processing.

The standard data preparation equipment in the yard offices consists of an assembly of conventional Teletype equipment: a keyboard send-receive page printer, an automatic tape transmitter-distributor, and a typing reperforator. The typical current average rental cost is \$83.50 per month. The preparation of master tapes could be expedited by using more elaborate equipment. Typical charge for this equipment is \$133. Justification for

this increase is that, through its use, it is possible to perform approximately 33% more work over a 24-hour period when the handling of repetitive information, such as preparation of ore consists, is necessary.

### Where Railroad Microwave Stands Today

IT'S IN USE . . .

On the	Between	For Distant	-
Alaska	Anchorage and Portage	50	mi
Canadian National	Sydney, N.S., and St. John's, Nfld.	550	**
Canadian Pacific Pacific Great	Vancouver, B.C., and Nanaimo	40	27
Eastern	Vancouver, Ft. St. John and		
	Dawson Creek, B. C	750	22
Pennsylvania	Norristown, Pa., and Reading	41	22
Rock Island	Norton, Kan., and Goodland	106	22
Santa Fe	Beaumont, Tex., and Galveston	68	22
	Los Angeles and San Bernardine		22
	San Bernardino and Cushenbury		22
	Barstow, Cal., and Bakersfield Topeka, Kan., and Kansas City	141	22
Canthana	(Argentine)	61	**
Southern	Adel, Ga., Valdosta and Live Oak, Fla	158	22
Southern Pacific	Dunsmuir, Cal., and Black Butte		22
		2,11	4 mi

### IT'S PLANNED . .

For the	Between	For a Distance of
Denver & Rio	Pueblo, Denver and Ogden	700 mi
Grande Western New York Central.	Indianapolis and Avon, Ind	
Santa Fe	Barstow, Cal., and Crestline	
Santa Pe	Barstow and Seligman, Ariz Amarillo, Tex., and Wellington,	314 "
	Kan.	
	Wellington and Topeka Winslow, Ariz., and	
	Albuquerque, N. M	288 "
	Albuquerque and Amarillo	
	Kansas City and Chicago	
Southern	Washington, D.C., and Atlanta	
Union Pacific	Omaha and Laramie, Wyo	563 "
		3,900 mi

# Page Service RAILWAY AGE

# REVENUES AND EXPENSES OF RAILWAYS

(Dollar Agures are stated in thousands: i.e., with last three digits omitted) MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1968

		Average	6				Maint.	Way and	d Structu	ares Ma	Operation Equ	ng Exper	8001			1						
Name of Road		operated	Freigh	Operating	and .		Total 1968	-			Total 1959	and Retire-	Traffic	Trans-	Total	Total 1950	Opera	,	from	Rallway		Net Rallway operating income
Akron, Canton & Youngstown Alabama, Tenn. & Northern Atchleon, Topeka & Santa Fe	Aprill 4 mos. Aprill 4 mos. Aprill 4 mos.	171 171 214 214 12,970	491 235 1,972 1,031 4,059	2,762		2,045 2,045 331 1,256 55,696 204,590	232 232 255 2129 23,570 2	56 237 50 199 6,791 5,120	en 10	324 324 35 0,802 10 2,910 41	282 8 39 0,941 1,887	15 61 22 22 788 5	183 183 18 454 777	157 621 76 376 18,628 74,648 15		383 1,479 150 595 39,683 152,947	76.9 65.9 77.6 72.3 87.8 65.3 59.1 47.3 72.8 71.3			286 286 30 114 8,544 9,919	10.0	71 188 42 42 158 6,363 9,598
Atlanta & St. Andrews Bay. Atlanta & West Point. Western of Alabama	April 4 mos. April 4 mos. April 6 mos.	81 81 93 93 133 133	1,270 230 943 271 1,129	8555		299 1,232 1,253 1,253 1,391	143 171 192 192	222222	37 34 37 34 37 34 37 37 37 37 37 37 37 37 37 37 37 37 37	262	127 127 202 203 234 234	32423	853388 853388	299 131 524 136 559	177 683 1.951 1.951 1.177	173 701 273 1,062 301	8852.9 885.6 885.6 885.8 885.8 885.8	558.0 556.9 882.5 885.7	645 645 645 645 645 645 645 645 645 645	78 20 75 43 155	2820008	388 167 119 119 124 124
Atlantic Coast Line. Baltimore & Oblo. States Island Rap. Trans.	Aprill 4 mos. Aprill 4 mos. Aprill 4 mos.	5,573	12,475 48,277 29,674 117,591 647	1,572 6,623 1,476 5,177 362	15,162 59,496 33,889 133,421 1,047	14,857 57,487 35,819 129,846 1,136	2,044 8,246 3,813 14,519 233	2,125 7,717 3,651 3,828 236	2,912 2,912 455	2,634 10,142 10,142 10,142 17,461 191	3,454 9,919 3,461 42 42 42	2,685 1,076 1,339 3	516 974 974 83 8	5,540 22,433 14,180 58,252 612	111.492 446.176 27.422 111.854 1,173	11.229 44.759 27.727 104.941 1.170 1	75.8 86.9 83.8 83.8 83.8 103.1	75.6	3,670 6,467 11,565 126	1,775 6,100 2,507 0,062 198	1.186 4.329 1.887 3.679 400	3,857 4,289 9,169 318
Bangor & Arostook Besserner & Lake Erie Boston & Maine	Aprill 4 mos. Aprill 6 mos. Aprill 6 mos.	662 263 263 1,557 1,557	1,486 2,293 6,988 5,183 20,310	24 83 431 1,936	1,491 6,379 2,384 7,332 6,640 24,137	1,483 6,013 2,285 5,687 26,599 25,394	396 1,651 255 916 836 2,709	358 1,521 254 911 803 3,258	25 25 25 25 25 25 25 25 25 25 25 25 25 2	1,135 1,135 2,598 3,526 3,526	310 7723 2,542 968 3,557	1110 441 141 248 997	33 38 35 148 161 654	1,719 1,719 1,885 2,365 10,063	1,171 4,973 1,688 6,866 4,452 18,425	1,159 4,823 1,677 5,936 5,158 30,681	78.6 78.6 79.8 79.8 773.7 76.3	2.5.4.5.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.	320 1,406 696 1,266 1,566 5,713	399 623 1.714 428 1,827	246 368 981 592 1,630	196 833 335 537 414 642
C. P. R. in Maine Carolina & Northwestern Central of Georgia	4 mos. April 4 mos. April 4 mos.	234 234 284 1,745 1,745	3,855 240 1,067 3,469 13,258	170	4,146 249 1,090 3,882 14,666	3,649 3,685 1,133 3,841 14,735	78 357 19 199 2,335	11.2 481 53 195 584 2,296	22772	123 521 28 110 778 2,997	142 575 33 128 688 2,761	18 21 21 195 762	82 82 21 21 699	174 926 74 324 1,474 5,850	2,002 140 140 3,239 12,680	2,196 188 729 3,094 12,350	88.55.55 86.55.55 86.55.55 7.55.55 86.55 8	72.6 57.3 667.3 888.6	2,138 1,996 479 1,986	278 1,121	1,584 29 165 344 842	1.961 31 128 518 518 1.359
Central of New Jersey Central Vermont Chesapeake & Ohio	Aprill 4 mos. Aprill 4 mos. 4 mos.	594 375 375 5,122 5,122	3,349 13,932 7,22 2,740 27,525 107,840	459 1,867 53 289 498 1,855	8,225 17,213 846 3,224 29,542 114,677	4,488 17,164 881 3,497 39,486	1,967 1,967 163 8,300 13,100	596 1,967 186 613 3310	388 388 17 70 70 493 3,890 3	2,985 119 475 5,344 51,325 21,325	3,264 3,262 456 5,288 10,430	134 535 9 9 1,963 7,599	316 19 75 794 3,406	3.041 8.621 8.521 1.327 10.565 42,201	3,507 14,889 2,584 21,668 86,392	3,711 15,113 2,735 21,999 85,701	88.0 886.0 886.0 773.3 773.3 775.3	882.7 888.1 888.4 771.8 74.2 24	2,483 167 167 648 7,874 18,285	1,967 54 3,743 3,473	86 951 6 4,257 15,812	545 4,996 8,436
Chicago & Eastern Illinois  Chicago & Illinois Midland  Chicago & North Western	4 mos.	86.2 86.2 121 121 9,280 9,280	2,398 9,630 6,35 2,575 14,142 54,675	150 618 1,338 5,557	2,911 11,418 646 2,626 16,677 64,992	3,394 12,383 731 2,263 18,459 69,719	382 1,417 175 2,701 10,332	397 1,646 44 151 3,038 10,726	31 125 28 374 1,512	3,108 1,564 1,564	398 3,229 3,229	183 732 23 92 4,050 2	136 553 36 121 562 2,255	1,192 4,769 176 618 29,093	2,388 9,556 4,556 14,514 539	2,484 9,587 1,387 15,952 61,379	82.9 83.7 88.6 88.6 88.6 88.4	775.2 649.3 8649.3 886.5 886.5	523 1.862 211 1.087 2.164 7.543	232 910 910 11.365 5,412	442 72 438 438 33 1,654	1,141 130 343 542 184
Chicago, Burl. & Quincy. Chicago Great Western. Chic., Milw., St. P. & Pac.	Aprill 4 mos. Aprill 4 mos. 4 mos.	8,659 8,662 1,469 10,598 10,598	16,530 65,837 2,575 10,944 14,894 69,926	1,497 6,028 27 1,814 4,167	20,368 79,543 2,801 10,840 118,043 72,898	22,165 87,331 2,836 11,173 20,998 77,518	2,522 9,859 381 1,383 2,877 10,725	3,182 10,567 401 1,544 11,202	366 1,529 175 175 421 1,716	3,622 15,368 483 483 3,191 13,397	4,328 17,527 1,692 3,545 4,218	1,086 6,345 1127 510 880 3,514	2,597 125 567 567 5,231	8.016 33.313 953 3.831 7.495 31,004	65,110 65,110 7,651 15,281 62,139	17,655 69,018 1,973 7,778 16,338 64,844	77.7	79.7 79.0 69.5 81.7	4,539 14,433 3,189 2,762 0,759	2.453 8,286 321 1,243 1,684 6,722	1.767 5,323 224 940 940 915	1,661 6,743 361 1,288 1,380 3,135
Chicago, R. Is. & Pacific Clinchfield Colorado & Southern	Aprill Aprill Aprill Aprill Aprill	7,527 7,526 293 712	15.198 57.841 1.789 6.980 1.125 4.314		18,079 69,949 1,799 6,937 1,371 5,189	19.043 73.877 1.845 7.366 1.392 5,373	2.357 8.536 187 771 160	2.426 8.881 205 890 284 734	251 976 22 89 89 113	3,213 12,007 1,388 1,388 1,388 894	3,243 1,291 1,291	2,610 126 427 79 315	2,217 265 265 365 140	7,347 28,854 459 1,810 2,107	14,476 55,484 1,113 4,513 4,084	14.535 57.664 1.129 4.540 4.293	79.3 61.9 75.5 78.7	78.3	3.663 14.465 2.424 3.36 1.196	1,552 6,385 208 831 194 609	2,817 668 2,182 138 424	1,053 3,728 2,540 3,33
Ft. Worth & Denver Colorado & Wyoming Delaware & Hudson	Aprill 4 mos. 4 mos. April 4 mos.	1,362 1,362 39 763 763	1,352 6,439 222 974 3,537 14,680			1.884 7.985 437 1.535 15.694	230 878 18 77 77 1,594	1,387 1,387 82 412 1,605	39 134 9 9 9 134 237	196 875 39 131 3,596	394 1,142 36 167 723 2,811	186 186 201 794	25. 25. 25. 25. 25. 25. 25. 25. 25. 25.	3,263 3,263 139 607 1,382 8,757	5,798 5,798 213 898 3,151 12,409	1.662 6.711 217 856 11.944	24.2 52.9 52.9 78.6 78.6	92.3 84.4 55.4 75.8 7.5 1.5	1,954 1,971 1,89 1,88 3,381	666 693 1111 478 368 1,530	463 363 3,083 2,083	268 268 2,118
Delaware, Lack, & Western Denver & Rio Grande Western Detroit & Toledo Shore Line	April 6 mos. April 6 mos. April 6 mos.	22.128	4,191 17,779 24,163 2,460 2,460	3,686	5,866 24,848 6,424 25,751 2,641	6, 204 23, 96,9 6, 44,3 24, 66,5 66,8 2, 95,8	2,372 2,750 2,750 226	2,353 2,353 2,621 2,621 262	166 597 97 378 4 16	3,949	1,133 4,395 977 3,836 360	336 1,363 331 1,308 96	198 880 238 946 19 80	2.972 2.990 8.124 2.25 966	5,186 21,657 4,485 16,951 1,666	5,389 4,315 16,611 1,767	88.3 65.8 65.8 65.8 65.8 8.2 8.2 8.3	886.98 67.98 67.99 7.78	2,383 2,383 8,890 203 981	2.782 1.139 5.072 342	3,713 1.63 1.63	977 945 3,818 263
Detroit, Toledo & Ironton Duluth, Miss. & Iron Range Duluth, So. Shore & Atlantic	4 mos. April 4 mos. April 4 mos.	248888 2667 2667 2688 2688 2688 2688 2688	7.638 3.728 8.253 8.976	enne.	1,715 7,796 6,344 6,185 3,863	3,950 3,917 3,917 3,966	1,738 1,738 1,738 1,738 1,865	1,099 1,099 1,944 122 422	29 116 323 421 421 421	1,711 6,36 2,814 421	1,585 1,585 2,419 466	1888 1988 1988 1988 1988 1988 1988 1988	237 237 34 134	2,680 1,287 3,313 775	1,307 5,490 2,583 9,018 471 1,840	2,314 2,337 8,245 1,867	76.2 70.4 59.5 147.7 88.3	67.4 666.1 82.6 210.5 79.7 90.4	2,305 1,760 -2,913 243	358 358 829 165	3,626	2,475 2,080 4,992 56

D

# REVENUES AND EXPENSES OF RAILWAYS

(Dollar Aguves ere stated in Rousends: Le., with last three eligits emitted) Month of April, and Four Months of Calendar Year 1969

							1		1		,	
Rallway prating come 1959 - 29 755	1,936	192 838 338 112 99	1,695 1,585 4,856	1,855 1,622 5,101 39	2,737	22 176 266 266 266 -1,333	82 271 271 1,159 1,750 5,865	21.0 6.0 6.0 6.0 7.0 7.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3	186 489 111 322 414 1,562	3,075 11,096 111 326 308	4.802 8.507 3.501 1.786 6.110	76 305 305 305 -1114
Ne 1966	1,991	353 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	1.632 3,596 79	1,383 1,985 3,893 3,893 18	2,400 65 211 170 265	363	280 280 1,280 1,669 8,964	215 803 63 222 28 115	-303 -663 96 351 351 1,288	3,033 111,183 208 707	2.654 9,154 4,244 1,256 5,523	4.708 4.708 175 175 88
Railway fax accruals 38 171 554	2,831 1,201 4,865	222 925 164 164 831 831	405 1,617 1,878 7,367 28 28	2,365 2,365 9,362 9,362 101	2,561 86 309 47	818 24 4467 1,879	1,664 1,664 1,646 2,886 10,844	1,102 1,102 154 674 57 230	280 658 162 690 357 1,413	2,367 8,618 473 96 312	22,831 3,623 3,627 1,725	981 87 355 34 136
Net from rallway operation 52 626 1,128		2,893	3,473 3,473 3,746 11,877 417	1,633 6,282 16,649 129 441	1,434 6,029 700 200 130	221 86 498 462 3,160	2,247 837 3,335 4,267	635 2,345 266 1,014 89 360	966 153 222 750 1,136 4,551	6,577 24,639 138 869 348 1,242	9,548 39,733 371 3,447 3,562 15,569	5,467 193 193 645 71 313
1959 72.1 99.0	3.1	778.2 990.2 91.8 80.8	93.1 86.5 78.7 81.3 70.0	772.5 779.6 82.0 86.4	59.7 56.9 56.9 48.8 67.9	77.1 75.9 89.8 84.4 87.2 93.3	88.5 91.3 63.7 81.5 81.3	76.4 886.3 88.8 86.8 62.3	98.7 94.5 56.3 75.4	74.2 75.8 84.2 86.1 86.1	86.8 84.2 78.9 88.1 76.6	81.2 444.4 446.3 888.3 89.1
Opera 1966 1 1966 1 75.1	mm#	74.3	85.1 82.6 89.8 83.4 779.4	76.0 79.8 88.7 88.7 85.4	55.6 55.6 55.6 55.8 17.1	76.9 78.1 25.8 38.9 189.4 88.4	87.6 61.0 79.3 79.3	71.0 73.8 83.8 84.9 70.8	997.7 998.7 597.3 775.3	74.3 775.3 48.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6	83.6 83.1 88.1 81.8 71.4 69.9	887.3 888.3 888.3 84.7
356 356 253 253		2.856 10.554 2.454 3.71 1.028	4,451 17,695 15,648 60,321 1,098	5,237 20,894 18,064 72,501 2,966	2,233 8,611 253 1,911 266 812	210 815 815 1,876 4,423 17,591	5,898 28,823 1,349 5,103 15,534 62,514	1,729 7,023 1,555 1,555 5,991 8,991	3,114 11,963 1,196 4,024 14,748	19,336 74,894 1,473 5,753 1,366	48.619 196.070 10.924 9.360 36.026	10,666 41,462 41,462 644 313 1,230
Total 1960 322 3,339	4, 259 0, 786 3, 778	2,328 9,792 2,295 2,295 1,128	4,832 16,581 15,765 69,626 1,670	5,163 20,810 17,652 71,435 2,571	2,248 8,727 248 992 265 886	194 787 418 1,777 14,535	5,161 21,013 1,310 5,365 15,223 61,326	1,552 6,610 1,377 5,796 215 884	12,786 11,211 297 1,126 3,457 13,827	18,989 74,349 5,349 5,386 1,176	48,617 95,364 10,992 10,992 8,905 36,143	10,137 41,000 193 762 290 1,182
Trans- flic portation 723 1,744	5,195	1,124 4,581 2,98 3,178 3,69	3,230 9,135 18,978 116 474	2,268 9,212 8,387 1,239	1,204 4,752 108 423 113 307	195 428 156 662 9,352	2,951 11,982 2,718 7,276 89,869	3,199 6,18 2,484 359	5,425 5,425 135 135 1,796 6,896	9,505 37,860 2,636 139 593	26. 9.9.9. 9.9.9. 1.1.1. 1.3.9.9 1.3.9.9 1.3.9.9	5,583 23,072 98 408 154 631
Traffic 1	376 376 ,489 2	333522	93 867 852 8,346 111	294 652 2,668 3,190	389 333 8	165 138 551	174 174 319 500 1,977	31 123 491 34 136	448 448 773 773	2,894 1990 422 4	4,330 16 65 251 357 1,439	1,122
Retire- ments	499 3,220	117 469 38 134 10 40	3,484 3,484 3,584	3,463 3,463 115	452 452 488 36 142	338 338 155 1727	169 677 98 392 1,146	82 332 101 405 13 51	143 575 40 160 262 1,048	3,917 3,917 305 44	2,401 9,754 1,328 1,894	525 1,927 42 42
Maint. E. Maint. E. S.	2,955 2,161 8,388	2,565 2,565 124 496 38 166	3,553 3,797 14,751 186	1,401 5,436 4,246 17,111 732	1,957 1,957 142 142 269 269	31 123 162 577 893 3,623	1,123 4,306 31.2 1,136 4,078 16,427	398 1,537 1,246 44 166	2.827 2.827 88 358 1,232 4,072	17,230 17,230 1,223 1,223 223	10,786 42,896 894 3,787 2,248 8,185	1,878 7,365 4 46 56 223
5 To 255	3,493	536 2,338 116 463 41 168	833 3,421 5,286 186 186	1,362 5,468 4,283 7,134 143 591	2,016 4,2 166 77 303	8.22.22.2 2.22.23.23.23.23.23.23.23.23.23.23.23.23	281 281 1.272 4.578	1,546 279 1,181 44 178	2,482 95 353 3,712	4,383 17,258 1,114 47 218	65,000 65,000 3,596 2,189 8,351	2,626 7,594 117 61 52 266
and Structu Deprecand Recire- ments	228 914	3.4 3.4 1.5 1.5	223 312 1,226 19	295 295 377 1,468	194 418 418 418 418 418	388	195 430 17 88 1,289	10 10 10 10 10 10	193 193 87 318	1,276 28 28 82 82 111	1,088 4,315 225 166 166	155. 155. 155. 155. 155. 155. 155. 155.
Tota 195 111 323 317		1,887 1,887 1802 460 84 364	2,657 3,657 10,419 211	923 3,669 3,392 13,136 114	1,138 1,138 225 71 210	122 122 229 229 229 2399 3,370	8,129 207 207 2,711 10,498	378 1,483 269 1,009 81	2,275 42 177 2,205	3,675 12,793 246 857 78 254	6,285 24,862 390 1,417 1,428 5,322	1,576 5,386 2,386 42 42 166
Maint. 1960 1960 300 300 341	-	1,716 1,716 342 342 130 620	2,596 2,966 10,216 49 198	3,497 3,233 12,787 327	1,053 1,053 148 148 56	23 98 38 180 180 2,439	3,455 2,888 7,422 1,988 9,488	1,379 1,379 998 119 71	2,072 2,072 38 157 512 1,858	3,414 12,434 249 920 76 294	6,556 24,886 469 1,665 1,665 1,304 5,027	5,49 278 278 178 178
ac. mlac.) 1959 1850 1.877 5.515	13,541	3,260 13,364 2,673 2,673 1,271	4,782 20,359 19,882 74,288 1,544	27,329 22,686 22,686 86,371 3,434	3,739 15,148 453 2,971 3985 576	1,074 1,074 1,797 5,074 18,854	5,759 21,937 2,119 8,364 19,765 76,924	2,264 8,744 1,862 7,967 1,535	3,154 12,656 12,656 1,698 5,338 19,893	26.044 98,835 1,756 6.681 878 1,667	232,796 3,573 12,394 13,767 51,019	13,963 49,962 355 1,391 1,380
Reven 1968 374 1,955 4,527	19,955 12,962 53,815	3,138 12,685 2,664 2,561 1,123	4,740 19,974 19,511 72,583 1,487	6,795 26,892 21,875 87,484 8,742	3,684 14,756 1,691 1,691 757	1,008 1,008 1,279 4,366 18,695	5,894 23,260 2,147 8,790 19,490	2,186 8,956 1,643 6,720 304 1,245	2,846 11,364 519 1,876 4,593 18,378	25,566 98,388 1,595 6,314 6,32 2,418	58,165 235,096 3,113 13,438 12,468 51,713	11,613 46,467 385 1,407 1,395
Operation of Pase.	528	3,289	2,462	318 917 917 9.239	38 ::::		4,616 18,374 155 155 664 2,628	750m ::	26 36	3,321	5,503 23,022 32 143 111 493	3,530
Preight Pa 365 1,929 3	15,962	2,316 9,193 2,080 2,080 1,098	4,111 17,345 17,497 65,295 1,436	6,199 23,346 17,644 79,838 2,691	3,251 13,084 431 1,688 371 583	1,005 1,005 330 1,366 17,365	1.928 1.928 17.994 17.222 68,647	2,052 8,346 1,594 6,594 288 1,187	2,656 10,642 1,865 4,150 16,637	22, 222 85, 245 1, 384 5, 823 2, 409	43,576 178,778 2,923 12,638 11,980 49,451	6,336 25,296 328 1,261 1,267
Average mileage operated during period 175 175	2,239	872 872 821 821 821 821	951 8,312 8,294 319	2,752 2,752 6,599 8,599 8,335	891 891 327 327 160 160	***************************************	344 746 746 5,684 5,684	936 936 1,391 1 391	3,222 3,222 172 172 2,917 2,918	9,413	10,368 10,368 220 2,170 2,170	1,762
Aprill 6 mos.	April April 4 mos.	Aprill Aprill Aprill Aprill Aprill Aprill Aprill	4 mos. April 4 mos. April 4 mos.	April April April April	April April April April April	April April April April April	April April April April April April	April April April April April	Aprill 4 mos. April 4 mos. April 4 mos.	April April April April April	Aprill Aprill Aprill Aprill Aprill	Aprill 4 mos. Aprill 4 mos. Aprill 4 mos.
Name of Road Duluth, Winnipeg & Pacific.	Eric	Florida Esat Coast Georgia Raliroad Georgia & Florida	Great Northera. Green Bay & Western.	Gulf, Mobile & Ohio. Illinote Central Illinote Terminal	Kansas Okishoma & Guff.	Lehigh & Hudson River Lehigh & New England Lehigh Valley	Long Island . Louisians & Arkansas . Louisville & Nashville .	Maine Central. Minneapolis & St. Louis Minn., Northfield & Southern.	Minn., St. F. & S. Ste. Marle Miscouri-Illinois M.KT Lines	Missouri Pacific.  Monon	Do New York Central.  Pitta & Lake Erie.  New York, Chicago & St. Louis	New York, N. H. & Hartford  New York, Sueq. & Western  (a)

Page Service RAILWAY AGE

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# REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands: i.e., with last three digits omitted) MONTH OF APRIL AND FOUR MONTHS OF CALENDAR YEAR 1969

Name of Road Norfolk & Western Norfolk Southern	April mos. April mos.	Average mileage during period 3,743 38 2,743 38 592 3 6,828 13	Freigh 710 925 925 995 995 621	Operation it Pass. 188 741	Revenus Total (in 1966 21,814 84,459 3,946 14,984 55,751	22,089 84,636 8,436 8,110 3,110 14,838 855,807	Maint. Total 1966 9,689 9,689 9,718 8,276	Way am Total 1959 1959 198 198 198 2,554 7,921	A Structu Berico Band Berico M	Total 1960 128 13 3.967 14 5.2.245 2.245 11 599 11 1.599 11 11 1.599 11 1.5	Operatis Total 1959 135 582 582 582 582 582 582 583 582 583 583 583 583 583 583 583 583 583 583	ulpment Veprec. Peprec. and and and Aetire- menta 46 46 46 863 264 1,	Traffic 414 .516 .711 2	Trans- portation 2.539 1 261 361 3.787 1	Total 1969 1969 2,362 2,593 12,749 48,982	Total 1959 13,459 52,529 2,719 2,744 48,006	Opera 1966 1966 1966 1966 1966 1966 1966 196	thung 1959	Net from caliway operation 9,452 34,289 255 454 2,185 6,769	Railway tax ecrusis 5,943 18,224 1,69 1,69 2,59 3,925 5,925	Ner opposite 1960 1960 1960 1960 1960 1960 1960 1960	Rallway rating come 1959 5,322 19,949 41 991 3,072
Northwestern Pacific. Pacific Electric. Pennsylvania.	Aprill Aprill Mos. Aprill Mos.	328 3528 3553 9,8954 9,8955	1.030 3.910 1.079 3.955 60.484 235,643	8,635	1,031 3,931 1,233 4,465 79,089 308,355	1,239 4,521 1,230 4,684 79,982 396,520	198 832 167 695 8,035 30,685	219 8887 1966 7481 7,857	18 71 23 94 1,474 14 5,868 64	284 284 50 14,50 11,50 11,50 11,50	84 831 8222 15,473 222 66,790	200 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	31 25 89 89 914 13	1,299 1,299 1,998 34,115 36,669 25	2,455 2,455 875 3,337 62,197	2,658 934 934 63,359 63,359	878-954 78-954 818-7-954	554.0 558.6 776.0 84.1	1,676 1,676 358 1,128 16,892 56,120	147 442 138 584 6,245 24,113	56 82 82 4,275 7,866	4138 4138 5138 5138 5138 5138 5138 5138 5138 5
PennReading S. S. Lines. Piedmont Northern Pittaburgh & West Virginia	Aprill Aprill Aprill Aprill Aprill Amos.	3338 126 136 132 133	2,252 488 1,932 3,093	25	2,856 2,856 1,983 3,139	2,445 1,977 3,923	\$200 \$200 \$200 \$200 \$300 \$300 \$300 \$300	748 748 1163 1463 1463 1463	25 0 1 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	300 300 152 152 611	523 323 135 145 642 642	256 103 39 39 181	31 127 127 390	1,922 377 317 869	3,345 245 245 995 658 2,611	3,414 1 227 916 7785 3,784	24.9 49.8 86.2 83.4 4.5 83.4	25.00 4.00 7.00 0.00 4.00	248 248 987 191 519	3977	242 83 E	1,863 322 322 346
Reading Richmond, Fred. & Potomac Rutiand	Aprill Aprill Aprill Aprill Aprill 4 mos.	1,363 1,363 118 118 391 391	33,437 1,332 3,316 1,324 1,324	2,052	37,991 8,721 8,721 1,429	36,189 36,189 3,269 1,578	1,631 4,452 186 695 74 298	1,153 6,238 140 624 67 390	194 766 1188 88 88 88	1.644 7.275 309 1.166 233	1,838 7,180 1,181 1,181 243	932 267 267 367	196 776 1199 1199 1199	3,868 16,394 2,762 148 663	7,200 30,743 1,334 5,348 1,356	7,635 30,306 1,377 5,628 340	26.59	883.7	1,898 7,247 918 3,373 73	2,548 2,548 1,952 1,23	2,496 1,943 1,943 1,843 1,844	853 2,636 169 732 30 25
St. Louis-San Francisco St. Louis-S. F. & Tenns St. Louis Southwest. Lines	Aprill Aprill Aprill Aprill Aprill	4,547 4,554 143 1,554 1,554	8,971 35,713 421 1,792 6,861 22,958	731	10,047 39,654 441 1,863 6,130 23,224	10,528 39,659 465 1,832 5,642 21,559	5,294 2,294 2,294	1,692 6,304 97 97 3,370	168 588 16 16 310	1,658 6,491 36 116 736 2,773	1,856 6,762 2,658 3,618	2,396 1 223 849	425 425 788 788 788 788	15,881 18,768 1,796 7,176	8,006 32,133 236 236 3,486 13,688	8,381 31,986 247 954 3,447 13,691	58.9 58.9 58.9 58.9	52.11.9 53.11.9 53.5	7,520 7,520 2005 9,537 9,534	2,928 86 86 1,272 4,293	3,834 66 273 1,156 4,140	3,729 67 67 274 917 3,336
Seaboard Air Line Southern Railway	Aprill Aprill Aprill Aprill Aprill Aprill	4, 144 4, 147 6, 267 6, 267	1,346 12,217 46,522 19,511	3,952	1,481 14,727 22,5518 89,721	1,367 14,36 14,134 23,535 89,561	1,784 7,941 2,777 10,990	218 1,894 6,922 3,013	286 994 352 1,282	2,692 10,319 4,633 5,467	2.54 2.543 10.097 3.821 5,366	19 727 2.911 1 3.990 2	17 657 668 1.888 585 2,026	127 467 20,030 20,030 28,073	10.650 10.650 10.650 15.496 62.021	1.022 10,489 41,229 15,655 63,454	74.44	74.6 74.1 74.1 74.1 70.9	4,067 14,452 7,922 27,790	53 153 2,012 6,721 3,027 12,286	1,715 6,556 6,556 1,963	43 1,712 6,831 3,418 1,960
Alabama Great Southern. Clan., N. O. & Ter. Pac. Georgia Southern & Florida	Aprill Aprill Aprill Aprill Aprill	328 328 337 397 397	2,975 11,735 11,735 2,731	34 74 324 324 331	1,371 5,565 3,316 12,998 3,283	1.612 3.770 33.700 8.702 3.447	1,078 2,359 7,099	1,965 1,965 2,391 152 578	2831	1,355 1,355 3,093 300 300	1,276 1,276 2,955 2,955 324	325 244 944 10 41	333 333 823 823 823 823	2,017 3,648 3,648 1,035	1,279 5,028 2,495 10,189 2,364	1,236 9,867 9,967 3,285	75.2 75.2 73.8 73.8 8	76.7 85.5 65.3 72.7 70.1	92 837 2,880 2,53 839	Cr. 84 447 1,255 181	130 2130 1,982 22 22	232 186 820 2,510 45
New Orleans & Northeastern. Southern Pacific. Texas & New Orleans	Aprill Aprill Aprill Aprill Aprill	22345	838 3,094 16,088 10,468 41,144	31 7,916 7,913 345 984	3,496 44,598 178,078 11,320 44,634	1.946 3.718 47.136 175.683 46,125	209 753 20,320 1,743 7,061	21.7 859 26.322 22.138 7,876	23. 733. 2.175 147 580	238 8 7 7 9 2 8 8 7 7 9 2 8 8 7 7 9	197 898 10.194 37.696 1.659 6.539	371 371 371 6,248 3813	3,039	241 1,037 16,533 65,788 3,987 16,397	3,969 34,357 36,679 8,196 33,389	35,246 135,956 8,972 34,581	82.1 89.8 77.0 72.4 74.8	74.9 74.8 77.4 75.0	169 10,242 41,488 3,124 11,245	8.83.83.83.93.93.93.93.93.93.93.93.93.93.93.93.93	138 4,665 19,232 1,914	316 316 316 3260 3,260 715 2,615
Spokane International Spokane, Portland & Seattle. Tennessee Central	Aprill Aprill Aprill Aprill Aprill	158 158 158 158 158 158 158 158 158 158	352 2,689 9,757 9,757 1,264	\$2	361 2,931 10,729 1,375	361 1,244 10,961 1,392	211 452 1,641 183	7428 1,794 1,794 161	222	1,956	1,885 1,885 214	21.5 85.15 85.15 85.15	4748	E 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2,102 8,349 1,046 1,046	2,645 8,146 8,146 1,032	54.6 71.7 77.8 76.8	53.4 58.7 77.9 74.3	2,386 3,386 329	265 265 295 295 295 191 191	976	25.55. 1.426. 1.426. 1.426. 1.426.
Texas & Pacific. Texas Menican. Toledo, Peoria & Western.	Aprill Aprill Aprill Aprill Aprill	1,828 1,828 161 161 239 239	5,300 21,484 1,038 1,038 2,415	1,123	25,256 25,075 348 1,130 2,512	25,258	2,917 2,917 196 196 295	3,145 2,145 232 73 291	3000	1,038 4,288 37 140 48 204	1,010 4,239 33 134 202	1,121 1,121 46 113 54	228 912 96 86 86 213 213	3.421 10,196 85 326 171 793	4,763 19,682 202 202 805 805 1,579	4.956 19.924 207 841 389 1.543	76.1	79.1 58.8 68.8 60.1 62.3	5,493 145 145 212 932 932	2,332	1,224 43 64 58 58 257	1,507 1,507 44 85 83 379
Union Pacific Wabseh Ann Arbor	April April April April 4 mos.	2,747 2,745 2,413 2,413 294	36,280 142,291 8,041 32,258 3,765	7,215	40,916 166,934 9,356 37,634 2,783	42,686 166,684 10,376 39,559 2,833	4,783 18,813 865 3,719 259	5,253 20,868 4,768 86 327	2,846 1115 653 7	7,226 39,713 1,362 5,620 648	8,111 32,547 1,458 5,775 169 633	2,382 9,484 1,888 179	3,313 5,168 1,337 1,332 133	13,965 56,634 17,590 1,423	29,392 19,926 7,283 29,982 2,547	31,407 124,634 8,129 32,195 2,669	71.8 74.5 77.0 96.1	74.6 74.8 78.3 93.9 93.9	11,524 41,889 7,652 2,25 2,25	7,894 26,643 2,799 231 231	2,799 8,896 1,795 1,785	1,998
Western Maryland. Western Pacific. Wisconsin Central.	4 mos. Aprill 4 mos. Aprill 6 mos.	843 1,188 1,188 1,031 3,031	3,987 16,013 4,163 16,201 2,467 9,854	1157 885 6 6	4,113 16,476 4,423 17,173 17,173 10,611	16,622 17,744 17,744 10,440	2,530 610 2,303 1,197	3,300 4,27 1,920 3,41 1,284	224 224 313 413 190	3,351 2,854 2,854 1,768	3,324 711 2,744 1,871	1,174	1,948	5,389 1,637 6,497 4,681	3.087 12.627 3.544 14.012 2.149 8.678	3, 698 12, 415 3, 256 12, 235 8, 833	75.1 76.6 88.1 87.5 81.6	67.0 73.0 72.9 76.3	3,849 3,849 3,149 1,933	2,228 443 1,620 785	2,895 373 1,400 127 204	3,401 2,427 318 215

### Carloadings Rise 12.9% Above Previous Week's

Loadings of revenue freight in the week ended June 11 totaled 648,463 cars, the Association of American Railroads announced on June 16. This was an increase of 74,162 cars, or 12.9%, compared with the previous holiday week; a decrease of 61,378 cars, or 8.6%, compared with the corresponding week last year; and an increase of 25,777 cars, or 4.1%, compared with the equivalent 1958 week.

Loadings of revenue freight for the week ended June 4 totaled 574,301 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE For the wee		CARLOADIN	
District Eastern Allegheny Pocahontas Southern Northwestern Central Western Southwestern	1960 78,449 98,104 55,570 107,676 92,893 97,514 44,095	1959 100,244 132,451 55,798 107,776 107,523 121,566 55,259	1958 88,167 107,274 50,228 115,061 90,374 111,497 50,236
Total Western Districts	234,502	284,348	252,651
Total All Roads	574,301	680,617	613,381
Commodities: Grain and grain products Livestock Coal Coke Forest Products Ore Merchandise I.c.I. Miscellaneous	37,775 3,798 103,610 7,212 34,804 69,370 31,017 286,715	50,366 4,874 112,580 10,823 38,172 80,078 41,023 342,701	53,709 5,499 100,135 5,552 38,983 51,232 44,371 305,900
June 4 May 28 May 21 May 14 May 7	574,301 640,388 636,808 639,954 641,703	680,617 587,063 686,152 692,996 678,160	613,381 529,779 570,425 561,040 535,579
		-	*

Cumulative total, 22 weeks ...13,200,414 13,562,370 11,953,951 PIGGYBACK CARLOADINGS.

-U. S. piggyback loadings for the week ended June 4 totaled 9,505 cars. compared with 8,389 for the corresponding 1959 week. Loadings for 1960 up to June 4 totaled 231,168 cars, compared with 167,953 for the corresponding period of 1959.

IN CANADA. - Carloadings for the ten-day period ended May 31 totaled 96,706 cars, compared with 78,836 for the previous seven-day period, according to the Dominion Bureau of Satistics.

	Cars Loaded	Rec'd from Connections
Totals for Canada May 31, 1960 May 31, 1959 Cumulative Totals	96,706 102,601	36,456 38,666
May 31, 1960	622,901	1,464,769 598,317

### **New Equipment**

► Nickel Plate.—Has added 70 trailers built by Highway Trailer Co. to its piggyback fleet. Order included 30 closed-van and 10 full open-top trailers, in addition to 30 heavy duty platform trailers. NKP's TOFC trailer fleet now numbers more than 400 units.

► Railway Express Agency.—Will spend \$7 million for 1,462 new trucks, tractors and semi-trailer units to be put into service beginning early this summer. Orders will be placed with 18 chassis, body, combination chassis-body, tractor and trailer manufacturers following ICC approval of financing arrangements.

### **New Facilities**

► Copper Range.—Company and Duluth, South Shore & Atlantic will pay cost of construction of approaches to connect with tracks on new Portage Lake lift bridge. Federal and state (Michigan) governments will bear cost of lift bridge construction and interlocking system.

Southern.-Placed an order with General Electric Co. for a multi-channel, transistorized microwave and two-way radio communications system to be installed between Washington, D.C., and Atlanta, Ga., 637 miles. Cost: \$5.3 million. Scheduled completion: late 1961.

### Purchases & Inventories

► Three Months' Purchases Up 7.2%.—Purchases by domestic railroads of fuel, material and supplies in this year's first three months were \$25,988,000, or 7.2%, higher than in the comparable 1959 period. Purchase and inventory estimates in following tables were prepared by Railway Age.

PURCHASES*	March 1960	Three Months 1960	Three Months 1959
	(000)	(000)	(000)
Rail	\$ 6,594	\$ 21,817	\$ 22,591
Crossties	4,975	14,922	11,591
Other Material	97,587	257,884	217,012
Fuel	30,955	93,572	111,013
Total *Subject to revision	\$140,111	\$388,195	\$362,207
INVENTORIES * †		March 1,1960	March 1,1959
		(000)	(000)
Rail		\$ 55,762	\$ 57,319
Crossties		76,017	88,259
Other Material		402,341	401,942
Scrap		24,723	25,375
Fuel	*******	20,663	24,267
Total	*******	\$579,506	\$597,162

† All total inventory figures taken from ICC statement M-125 for month indicated.

D

# People in the News

ATLANTIC COAST LINE.—Effective July 1, R. F. Paulk, assistant general storekeeper, Wilmington, N. C., will be transferred to Waycross, Ga. M. C. Brinson, division storekeeper, South Rocky Mount, N. C., transferred to Waycross, effective June 16. C. C. Doughtridge, assistant division storekeeper, Rocky Mount, named storekeeper there. T. W. Goolsby appointed assistant storekeeper, Rocky Mount.

W. L. Petrie and A. M. Doniel appointed

W. L. Petrie and A. M. Doniel appointed general agents, Birmingham, Ala., and Orlando, Fla., respectively.

BALTIMORE & OHIO.—Raymond A. Rietz, division freight agent, Springfield, Ill., transferred to Newark, Ohio, succeeding Loren S. Pritchett, retired.

CANADIAN NATIONAL.—Kenneth A. Toy appointed assistant foreign freight agent (rates), Montreal, Que., succeeding T. A. Waldron, promoted.

The title of A. K. Wilkins, system supervisor station service, changed to supervisor merchandise services.

CHICAGO & NORTH WESTERN.-J. R. North appointed diesel supervisor, Twin Cities division, Minneapolis.

L. G. Tioman appointed division engineer, Lake Shore division, Green Bay, Wis.

W. A. Weiss, auditor of revenues, Chicago, appointed freight claim agent there, succeeding R. F. Sederberg, retired. G. R. Carr, auditor disbursements, Chicago, named to succeed Mr. Weiss, and in turn is replaced by D. J. Fliss.

DOMINION BUREAU OF STATISTICS.—The former Transportation and Public Utilities Section, Ottawa, Ont., Can., has been reorganized into two parts. A. L. Brown appointed chief. Transportation Section (in charge of rail, road, water and air transport). L. S. Evons appointed chief, Public Utilities Section (in charge of telephone, telegraph and cable; radio and television: gas and oil pipe lines; electric power and other public utilities).

FRISCO.—J. M. Godfrey appointed superintendent terminals, St. Louis, succeeding W. F. Mitchell, who retired June 15.

LOUISVILLE & NASHVILLE.—Robert M. McClellan, who has been with the L&N since May 1918, appointed traveling storekeeper at Louisville, Ky., replacing R. W. Hall, retired.

MILWAUKEE.—T. E. Witt, trainmaster, Twin Cities Terminals, St. Paul, Minn., appointed assistant superintendent, Dubuque & Illinois division, Ottumwa, Iowa, succeeding J. F. O'Dore, retired, N. D. Owen named to replace Mr. Witt. J. D. Cowart appointed trainmaster, Chicago Terminals, Bensenville, Ill.

NEW HAVEN.-J. M. Finch, assistant director of research, at New Haven, Conn., appointed director of research.

Title of R. H. Davis, mechanical superintendent, changed to general mechanical superintendent.

NEW YORK CENTRAL.—Wesley F. French, manager of rate cost studies and statistics, and Normon J. Hull, Jr., manager of general accounts, appointed assistant comptrollers.

R. E. Hughes appointed general foreman, West Detroit car shops, succeeding C. M. Ferguson, transferred. READING.—Derwin F. Steimling, assistant manager, named manager. Port Richmond marine terminal, Philadelphia, succeeding Edward F. Keene, retired. John W. Stopleton, maine agent, Port Richmond, succeeds Mr. Steimling as assistant manager.

SOO LINE.-L. R. Kassick, supervisor of freight cars, Minneapolis, has assumed the duties of A. M. Whire, supervisor of passenger car department, who retired May 31. Mr. White's former position abolished.

SOUTHERN PACIFIC.—J. W. Corbett, vice president—system operations, San Francisco, retires June 30.

TEXAS & NEW ORLEANS.—W. A. Gull, Jr., commissary superintendent, appointed special representative — traffic department, Houston.

UNION PACIFIC.—Wolter P. Borrett, assistant general freight agent, Omaha, Neb., appointed assistant freight traffic manager there, to succeed Mortin Holbrook, retired. Charles D. Chambers replaces Mr. Barrett.

### OBITUARY

William 7. Cyphers, who retired in Dec. 1951, as tie and timber agent of the Lackawanna, died May 30.

Curtis Kies, 74, who retired in 1956 as assistant signal engineer, Gulf, Mobile & Ohio, died May 12.

E. M. McCauley, retired vice president—accounting, Detroit, Toledo & Ironton, died June 3 in Chatham, Ont.

J. C. McLendon, division storekeeper, Atlantic Coast Line, Wayeross, Ga., died May 18.

### Supply Trade

Duane G. Hansen has joined Lewis Boh & Not Co. as merchandising manager, a newly created post.

Robert R. Miller has been appointed manager, railroad tool sales, Farrel-Birmingham Co., Inc., Consolidated Machine Tool Division, Rochester, N. Y. Mr. Miller was formerly western sales representative at Long Beach, Cal.

Cline Truck Co., Kansas City, Mo., has appointed Horry R. Burtell & Associates, Inc., St. Louis, Mo. as sales representative for Cline Railroad Trucks in the United States, Canada and Mexico.

Theodore J. Bacalis has joined A. M. Byers Co. as a field service engineer, working out of the Detroit office. Mr. Bacalis was previously associated with the Colorado Fuel & Iron Corp.

William D. Wallace has been appointed to the newly created position of vice presidentengineering and research, W. H. Miner, Inc.

G. C. Scott, Jr., service assistant to the vice president of sales, Vapor Heating Corp., retired June 1. He will be retained by Vapor on a consulting basis.



Robert R. Miller



 W. Bordo, vice president and general sales manager, Okonite Co., Passaic, N. J., retired June 15. H. L. Ledermann appointed assistant manager—product advertising for Okonite.

Robert C. Geekie has been appointed southwestern and St. Louis representative of Chicago Molleoble Castings Co., effective July 1.

H. L. Emerson, district sales manager, Roil Joint Co., Division of Poor & Co., St. Louis, has retired. Effective June 15, the Rail Joint Co. will be represented in St. Louis by Will H. Reaves, Inc., 1084 Arcade Building, St. Louis 1.

ALCO Products, Inc., has opened a new \$500,000 production center for cold-wound springs at Chicago Heights, Ill. The new facility is housed in an 18,000 sq. ft. addition to the firm's plant at Chicago Heights.

John E. Stork appointed assistant vicepresident—industrial relations, Westinghouse Air Broke Co. Mr. Stark was formerly director of personnel of R. R. Donnelley & Sons Co., Chicago.

Robert A. Loddengoord has joined Serve Corp. of America, Hicksville, L. I., N. Y., as serve instruments section manager, Industrial Products Engineering. Mr. Loddengaard was formerly with Republic Aviation Corp.

Thomas W. Collins, Jr., has been named manager of agricultural chemical sales. General Chemical Division, Allied Chemical Co., New York. Mr. Collins was formerly assistant sales manager.

Daniel B. Lumb has been appointed Detroit division manager for Oakite Products, Inc., succeeding Thomas R. Smith, retired. For the past seven years Mr. Lamb has been serving Oakite in the Kokomo, Ind., area.

### Dividends Declared

ALLEGHENY & WESTERN,—guaranteed, \$3, semiannual, payable July 1 to holders af record June 17.

BEECH CREEK.—guaranteed stock, 50¢, payable July 1 to holders at record June 15.

BOSTON & ALBANY.—\$2.50, payable June 30 to holders of record June 15.

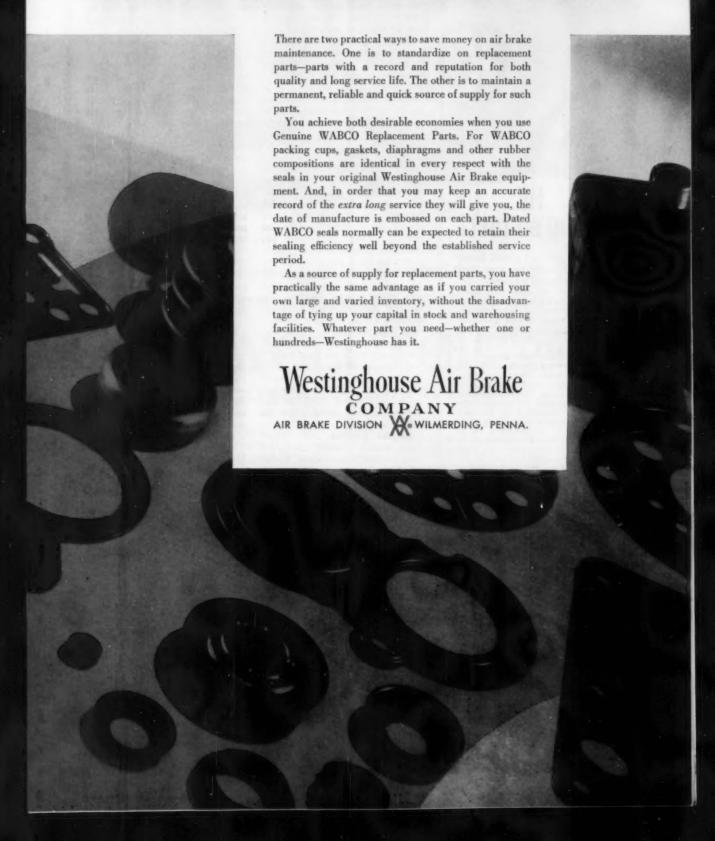
PITTSFIELD & NORTH ADAMS.—\$2.50, semiannual, payable July 1 to holders of record June 24.

TENNESSEE, ALABAMA & GEORGIA.—25¢, semiannual, payable June 20 to holders of record June 3.

TEXAS & PACIFIC.—\$1, quarterly, payable June 30 to holders of record May 23.

WESTERN MARYLAND,—common, 45¢, quarterly; 4% 2nd preferred, 40¢, quarterly; 5% 1st preferred, 70¢, quarterly; 7% 1st preferred, 70¢, quarterly, all payable June 29 to holders of record June 17.

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### **Editors Afield**

Preaching from the rostrum was at a minimum at this year's superintendents convention - which is perhaps a little unusual, since a superintendent is normally an easy target for exhortation and admonition from all sides, within and without the industry. Wabash President Herman Pevler, in particular, shook up the usual order of things in delivering the traditional charge to the superintendents to open the meeting. He ran through the accepted list of supervisors' duties and responsibilities - and then launched into a tables-turning discussion of the obligations a management owes its line officers. His remarks won't go unremembered. A sizeable stack of copies, provided by the Wabash and placed on a table outside the meeting room, disappeared like chocolate milk at a school picnic.

The speakers put a lot of emphasis on the supervisor's relationship to his men. The superintendents came to the meeting with the first industry wage agreement less than a week old, with the work rules issue looming up bigger than ever, and also with the C&NW-ORT Supreme Court case fresh in their minds. They also had before them an AARS committee report pointing to a crying need for better leadership and better two-way communication centering on the superintendent.

So the question arose: How? How develop attitudes among the rank-and-file, whose union leadership sometimes appears to have a strangle-hold on thought and action? How improve communication, when employees are being bombarded with anti-management writings-often without answer, effective or otherwise, from management?

One superintendent came up with a logical answer, at least in theory: "Use the employee desire for security to get him to participate in building security by helping build the company." But the old question-How?-still cropped up as new ideas came into the glaring spotlight of pro-and-con discussion.

One eastern road has tried area group conferences, attended monthly by lower-echelon supervision from all departments, to discuss problems posed by a three-man

ST. LOUIS, MO. steering committee. Some of the ideas developed can be handled at the local level, others are sent on to the steering committee when higher-up action is required.

A western carrier has developed a work simplification program that brings supervisors together for two hours weekly. Their ideas are pamphletized and distributed all over the railroad-thus producing the idea-interchange everybody agrees is vital. But, to make any kind of program work, a superintendent has to listen. He has to be willing to keep his ear to the ground. . . Actually, it's one of the most important things a supervisor can do.'

All well and good, another superintendent commented. But these programs involve supervisors, who are supposed to have management's interests at heart anyhow. What about communication with the employee, the individual who sometimes acts as if he's working more for his general chairman than for his supervisor?

A southwestern road hand-picked a class of 28 trainmen and, working through a public relations representative, held daily meetings for a week. Free-wheeling discussion was encouraged. Some success was noted. Out of that class, the road developed two assistant trainmasters and two yardmasters who had never before held supervisory jobs.

Another eastern road has begun sending a management newsletter to everybody on the property, instead of just to supervisory personnel. The same company has offered prizes of stock shares for certain types of employee sug-

Perhaps two thoughts, from an assistant superintendent of transportation, and a vice president can sum up the problem:

· "We have to do something to get them [the employees] to change their thinking, to get them away from the control the brotherhoods have over them.'

· "I'm appalled by the rabblerousing [in some labor publications]. . . If the employee is only fed that kind of thinking, there's no question but that he'll consult the general chairman before he decides if his heart's in it."

-Gus Welty



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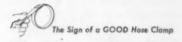
- A first-stage rail rapid transit system (to cost \$915,986,000) has been recommended by San Francisco Bay Area Rapid Transit District engineers as "financially feasible." The proposed 98-mile system is a modified version of a preliminary plan calling for 132 miles and tagged at \$1.2 billion (RA, May 30, p. 37). The modifications were made to fit the proposed system within the bonding capacity of the district.
- Passenger fares in Canada are scheduled to go up under an application by Canadian Passenger Association to the Board of Transport Commissioners. New basic rate sought is up from 4.4 cents to 5 cents per mile, with minimum oneway fare up from 25 cents to 30 cents and round-trip from 50 to 60 cents. The proposal will not affect commuter rates, nor fares between eastern Canada and the Pacific coast, nor "all inclusive" fares. If granted, fare increases will be applied in gradual stages.
- The railroads' competitors "obviously are united in a desperate attempt to block the railroads' efforts to better their position in the transportation field," AWR President C. M. Roddewig charged last week in remarks prepared for delivery at a meeting in St. Louis. But, he said, "substantial benefit to the public will result if rail carriers are permitted to become complete transportation companies."
- The St. Louis Transit Commission would be created under a charter amendment proposal submitted to the board of aldermen last week. If approved, St. Louis voters will be asked to decide on public ownership and operation of their mass transportation system in the November general election.

- Far from being a "museum piece," the railroad box car has held its position well in new car deliveries to the railroads over the past 10 years. From 1950-54, 36.4% of the 335,000 cars delivered were box cars; from 1955-59, 36.3% of the 285,000 cars delivered were box cars. George L. Green, vice president, Pullman-Standard, quoted the figures at the "Suppliers Answer Your Questions" panel discussion during the recent AAR P&S Division meeting, in answer to a question regarding the box car's future. Railway Age erroneously indicated that the 335,-000 and 285,000 figures represented box car deliveries alone for the respective periods (RA, June 13, p. 74).
- Operating men recognize the value of a good employee publication. Members of the superintendents association, surveyed on employee morale and ways to improve it, put "informing employees through regular publications" first in listing areas where "greatest improvement can be made in employee communication." Also high on the list: Giving employees "understandable information . . . on financial status of company."
- Top officers of the American Association of Railroad Superintendents for 1960-61 will be: President, A. J. Cowie, superintendent, CP, Regina, Sask. (RA, June 13, p. 47); vice presidents, W. B. Groome, superintendent, UP, Los Angeles, Calif.; A. W. Colnot, assistant to general manager, B&O, Pittsburgh, Pa.; B. G. Nash, assistant regional manager, C&O, Detroit, Mich.; and R. C. Madsen, terminal superintendent, NYC, Elkhart, Ind.
- "Passport to Good Commuting" is the title of a brochure being distributed by the New York Central to 1,500 June graduates of Westchester (N. Y.) high schools. The "passport" contains ticket information, tips on commuter "fashions." One tip: It's "fashionable" to complain about late trains. Another: 93% of NYC's suburban trains are "right on time."

- Comprehensive study of "Jurisdicdictional Conflicts and the Coordination of Transportation" has
  been issued by the ICC's Bureau
  of Transport Economics and Statistics. As Bureau Director Edward
  Margolin explained, the study
  "identifies and describes the nature of various jurisdictional conflicts and other facets of federal
  policy which may be obstructing
  fuller coordination of transportation services and underlines a
  number of problems that require
  consideration in this connection."
- St. Louis Car Co. will be acquired by General Steel Castings Corp., effective June 30, according to a joint announcement issued by the two companies June 16. The announcement followed a meeting of General Steel Castings' directors to consider methods of acquiring the assets, plants and business of the subway-car producer. The price was not specified.
- Accidents claimed the lives of 20 railroad employees in April and caused injuries to 1,000 compared with 10 deaths and 1,103 injuries in April 1959, according to the ICC's Bureau of Transport Economics and Statistics. Two passengers were killed in train accidents in April and 17 were injured, compared with no deaths and 10 injuries in April 1959.
- TRRA's success story on its expedited terminal setup at St. Louis (RA, May 9, p. 24) will fall upon receptive ears June 22 in Buffalo, N. Y., when TRRA President G. W. Maxwell tells the "howwe-do-it" story to the Great Lakes Region Rail Shippers Advisory Board. Board President G. W. Wright's comment on the Maxwell presentation: "Just what we've been looking for."
- College scholarships valued at \$76,-000 have been awarded to 25 sons and daughters of PRR employees. Fourteen of the awards are Frank Thomson Scholarships, endowed in 1907 by the children of the railroad's sixth president. Eleven scholarships are sponsored by the Women's Aid of the Pennsylvania Railroad System.



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# Spotlight on Freight Traffic

There's no doubt about it—the railroad department now most in the spotlight (and on the spot) is the traffic department. The department's situation, acute as it has been all along, is now intensified by the urgent need of the railroads for added revenue to meet the cost of increased wage rates. If this revenue is to be obtained, it's the traffic department that will have to obtain it.

Most traffic departments are in process of revising their policies and activities to meet drastically changed conditions; and these necessary revisions have to be made while continuing regular operations. As one traffic executive has expressed it: "We have to put out fires and build ourselves a new house at the same time. The carpenters working on the new construction sometimes get tripped up by the firehoses."

Long-run policies that chief traffic officers have to decide upon and get into operation without delay include such major subjects as—

Development of consistent rate policies (e.g., deciding to what degree, and on what commodities, cost considerations must be the main determinant— and in what situations market competition of shippers has to be given major emphasis.)

Where costs are an important factor, deciding whether ICC average out-of-pocket cost figures are to be controlling—or whether each railroad's own cost computations should take precedence.

► The extent to which piggyback can be developed and be made to harmonize with the regular carload rate structure—not undermining the latter, and not handicapping the development of piggyback and "containerization."

▶ Determining the need for—and actual application of—"diversification" by railroads to embrace other agencies of transportation.

▶ Methods of developing service standards, in cooperation with the operating department, so that dependable schedules can be provided for shippers and receivers.

► Development of incentives to promote efficient loading of freight cars, and exploring the problem of getting paying loads for empty "back-hauls."

► Finding ways and means to end the deficit handling of LCL traffic (which some traffic executives believe to be as serious as the losses from passenger service).

Recasting the class rate structure—so that class rates will be more realistic from a stand-point of competitive costs and rates, and will actually attract and move some tonnage. Also to be determined is whether present class rate progressions have the proper "shape" (i.e., not being unduly high, competitively, on the shorter hauls); and whether the present classification is not unrealistically elaborate (since the only "classification" private trucks observe is space occupied in relation to weight, and the insurance risk).

Developing systematic market information on all potential traffic, and channeling this information to salesmen who will use it constructively (along with rate and service data) to build new business.

▶ Methods of maximizing effectiveness of the sales force—including providing salesmen with adequate incentives, and proper information and guidance, and not giving them more customers to serve than they can deal with adequately.

The foregoing list by no means exhausts the assignments now on the agenda of most railroad freight traffic departments, but it does give some idea of the scope and magnitude of this department's task. It is a serious question whether very many freight traffic departments are adequately manned—in proportion to the job which confronts them. And, nowadays, when more men are needed, too often the decision is that "we'll have to get along with what we've got." The answer may have to do for some railroad departments, but it is scarcely satisfactory for the one department on which all others depend for their sustenance.

Freight traffic executives know what their problems are, and most of them are tackling these problems as vigorously as their means will permit. But every railroad department has a vital interest in the success of the traffic department in getting and applying the right answers to the many questions that confront it. No one course of action will have greater impact on the future of railroads than resounding success by traffic officers in readjusting their operations to meet the needs of today's all-out competitive environment.

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